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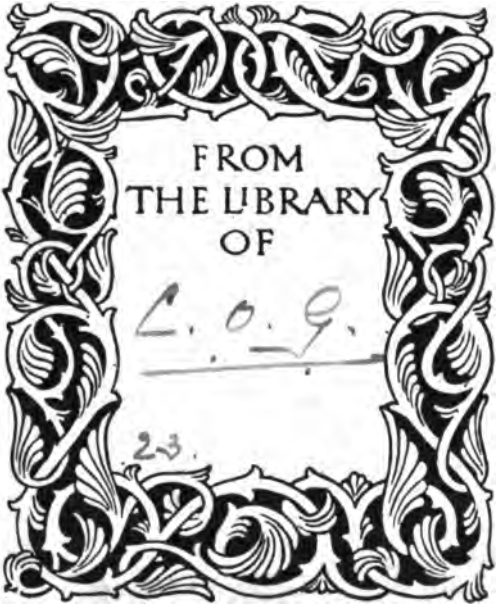

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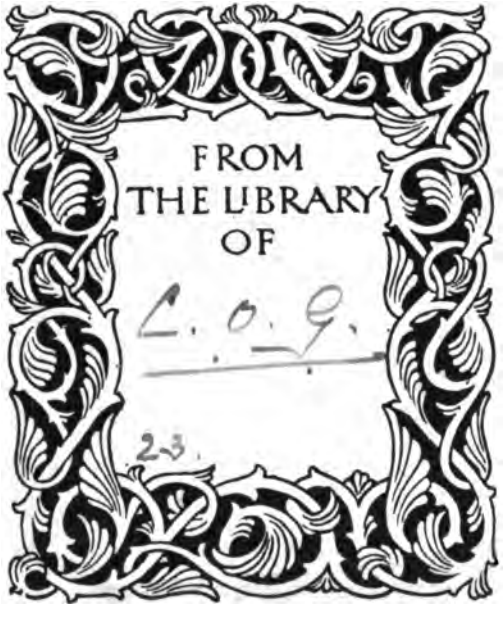

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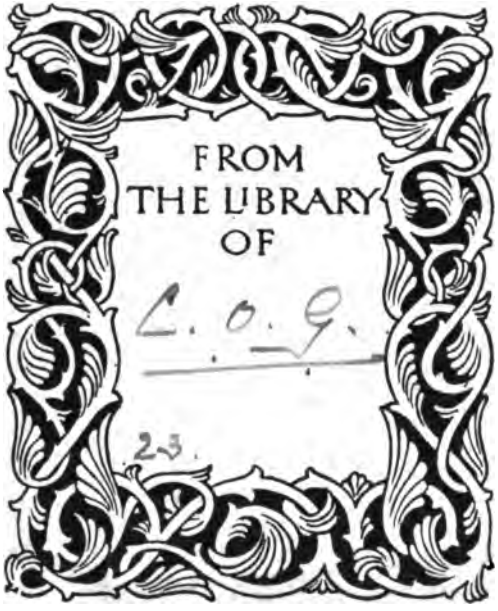

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THREE VOYAGES OF A NATURALIST.

"VALHALLA," R.Y.S.

(Photographed by Debenham.)

THREE VOYAGES

OF A

NATURALIST

BEING AN ACCOUNT OF

MANY LITTLE-KNOWN ISLANDS IN THREE OCEANS VISITED BY THE "VALHALLA" R.Y.S.

BY

M. J. NICOLL

MEMBER OF THE BRITISH ORNITHOLOGISTS' UNION

WITH AN INTRODUCTION BY

THE RT. HON. THE EARL OF CRAWFORD

K.T. F.R.S.

WITH FIFTY-SIX PLATES FOUR SKETCH-MAPS AND TEXT ILLUSTRATIONS

WITHERBY & CO.

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INTRODUCTORY NOTE.

By the Right Hon. the Earl of Crawford, K.T., F.R.S.

It is usually supposed that when a man takes upon himself to write a Preface or an Introduction to the work of another, he should have some qualification—some knowledge of the subject to be dealt with. It is best, therefore, that I do at once disavow any qualification, and confess to a lamentable ignorance on the subject of Natural History. My only desire is to relate in a few words how it came to pass that the possibility of the writing of the book arose.

For many years it has been my lot to live in close communion with two inseparable hangers-on —the one rheumatism, the other asthma. I found relief by going to sea, provided it was towards the Sunny South. The cold and damp of a home winter I have not faced for fifteen years.

In 1902 I was preparing to go round the world when one of my brother trustees of the British Museum suggested that I ought to bring back

something for the Natural History Department. The result was that I was strongly recommended to obtain the assistance of Mr. Michael Nicoll.

Such was the beginning of a friendship which has endured the severest known test—that of living together at peace on a ship through long calms.

We have had three voyages, in the course of which we have passed many southern seas, calling at various islands, and always adding to the store for the Museum—thus sailing down the east coast of South America through the Straits of Magellan up to Valparaiso in Chili, we struck out west for an eight thousand mile run across the Southern Pacific Ocean, visiting islands new to us all, each more charming than the other, and so home after going round the world. Again, we fitted out for a less ambitious cruise in the West Indies and the Gulf of Mexico.

How we again set forth for the wilder and less known Southern Indian Ocean, taking on the way the islands of the South Atlantic—running through the seas of Vanderdecken, though we did not see the Phantom Ship; how we encountered two nice little cyclones on the Madagascar coast, and got into the group of practically unknown islands to the North, where man is so seldom seen that the birds take no heed of the visitor; how we got ashore, and got off again without hurt—all these things are told in the pages that follow.

But what those pages do not tell falls to my lot. It is to say how much I and my fellow trustees of the British Museum have appreciated the work done by Mr. Nicoll, his skill in the preparation of the many hundreds of specimens now in the National collections, and his whole-hearted zeal for his favourite science.

Time severs many links and brings to some promotion. Thus, on his return from our last voyage, Mr. Nicoll was appointed by the Egyptian Government to the post of second in charge of the Zoological Gardens at Giza, near Cairo, and thus our rambles together are as of the past; but I trust that the pleasant hours in many and various scenes of the world may be brought to life again in this book, which I hope will run to many editions.

My "rolling stone" has started. "Valhalla" is now taking in her stores, and ere these words of mine see the ink of the press, I shall be well on my way to the far East—alas, without my companion.

CRAWFORD.

PREFACE.

Lord Crawford has explained in his most kind Introduction to this little book how it came to pass that I accompanied him on three delightful cruises in his yacht "Valhalla."

To visit so many out-of-the-way spots, and to see so much of the world under these charming circumstances, was an ideal experience and a generous education. Seldom does it fall to the lot of a naturalist to be given the opportunity of examining the fauna of so many rarely-visited places, nor can such experiences fail to produce matter for life-long reflection. No words of mine can express adequately the gratitude I feel to my ever-kind and generous host for having provided the means to enjoy these rare and never-to-be-forgotten experiences; I can but say that whatever success may have been achieved in making collections during these voyages is due to Lord Crawford's ever-ready help and encouragement.

I should like also to offer my very best thanks to Dr. P. L. Sclater, F.R.S., to whom I am indebted for my introduction to Lord Crawford.

I am but one of many young ornithologists who have been started and encouraged in their career by Dr. Sclater.

In the following pages I have devoted a chapter to each of the most interesting and the least-known islands or regions explored. Some places were visited more than once, and in such cases all my observations have been brought together, so that the course of each voyage has not been always strictly adhered to. It will, therefore, be well to give a brief itinerary of each voyage, and to set down the chief results obtained.

First, however, I must tell of the good ship that carried us safely through calms and storms by sail and steam for over 72,000 miles. "Valhalla," R.Y.S., is, I believe, the only ship-rigged yacht in the world. She is of 1700 tons displacement, and is fitted with auxiliary screw, which, under favourable conditions, will drive her through the water at a speed of about 10½ to 11 knots an hour. It is under sail, however, that "Valhalla" is at her best, and on many occasions we logged 16 knots per hour. A better "sea" ship has probably never been built, and under the worst conditions it was rarely that she took any water aboard. The way in which she rode out a cyclone off the Mozambique coast was wonderful; the waves towered to a height beyond belief, yet not a drop of water came aboard, nor was any damage sustained. In fact, the only serious

THE EARL OF CRAWFORD AND THE LIVE BIRDS AND ANIMALS COLLECTED IN 1906.

mishap experienced during my voyages occurred off Cape Guardafui, in 1903, when a sudden whirlwind snapped the jibboom, hurling it into the air like a straw.

"Valhalla" was the first ship to be fitted with the "Brougham patent electrical steering-gear," an invention which makes steering possible from any part of the ship. In 1905 she took part in the famous yacht race for the German Emperor's Cup, from Sandy Hook to the Lizard, and, although by far the largest yacht, she came in an easy third.

The accommodation on board is palatial—most ample "headroom," large cabins, and electric light throughout. The freezing room is capable of carrying many tons of meat, sufficient for a very long cruise. The total number of crew carried, including officers, engineers, and stewards, was about sixty-five. Indeed, under any consideration, a better or more beautiful yacht could not be imagined.

First Voyage.

During the first voyage our party consisted of Lord Crawford, Major L. B. Wilbraham, Dr. W. B. Macdonald, and myself. We left Cowes on 19th November, 1902, on a voyage which lasted rather more than eight months, and during this time 38,000 miles were covered.

After calling for coal at Lisbon, Madeira, the

Canaries, and Cape Verde Islands, we ran down the Atlantic coast of South America, calling at some of the islands, and visiting Bahia and Montevideo for coal, thence through the Straits of Magellan and Smythe's Channel into the South Pacific. From Valparaiso we sailed westwards amongst the South Sea Islands; thence through Torres Straits into the Indian Ocean. After leaving Ceylon we steamed south-westwards until the African coast was sighted, hoping—and in this we were partly successful—to escape the fury of the monsoon. The remainder of the voyage home was performed by way of the Red Sea and Mediterranean, and, after a pleasant passage through these waters, Cowes was reached on 1st August, 1903.

Below is given a detailed itinerary of this voyage:—

Lisbon, 24th to 26th November, 1902;
Madeira, 29th to 30th November;
Las Palmas, 1st to 3rd December;
St. Vincent, Cape Verde Islands, 10th to 12th December;
St. Paul's Rocks, Mid-Atlantic, 17th to 18th December;
Fernando de Noronha, 20th to 22nd December;
Bahia, Brazil, 26th December to 5th January, 1903;
Montevideo, 14th January to 20th January;
Straits of Magellan, 28th January to 5th February;
Smythe's Channel, 5th to 10th February;

Valparaiso, 14th to 24th February;
Easter Island, 10th to 13th March;
Pitcairn Island, 22nd to 23rd March;
Tahiti, Society Islands, 31st March to 17th April;
Tutuila Island, Samoan Group, 22nd to 24th April;
Apia, Upolu Island, Samoa, 25th to 29th April;
Suva, Fiji Islands, 3rd to 6th May;
Thursday Island, Torres Straits, 18th to 23rd May;
Singapore, 3rd to 9th June;
Colombo, 17th to 20th June;
Aden, 2nd to 3rd July;
Suez, 10th July;
Port Said, 11th to 13th July;
Gibraltar, 22nd to 26th July;
Cowes, 1st August.

The collections made during this voyage comprised some two hundred and twenty bird-skins, thirty mammals, a few hundred fishes and reptiles, and several hundred butterflies, moths, and other insects.

No new species of bird or mammal was obtained, but a series of skins of the Pitcairn warbler (*Tatare vaughani*) was of considerable interest. The types of this species are spirit specimens in the British Museum: no skins of the bird had ever been collected before; moreover, the fact that the first plumage of the young differs very considerably from that of the adult of this warbler was unknown until we obtained specimens.

Another interesting discovery we made was that Richardson's skua (*Stercorarius crepidatus*) winters in great numbers in the Bay of Valparaiso—many hundred miles further south on the west coast of America than it has previously been found.

The two peculiar species of land-birds which inhabit Fernando de Noronha, the Brazilian convict island, are also perhaps worthy of notice, on account of their rarity in collections. These are a flycatcher (*Elainea ridleyana*), and a warbler (*Vireo gracilirostris*), which were previously represented in the British Museum by the type-specimens only.

Amongst the fishes obtained during this voyage one—*Corvina crawfordi*—from the harbour of Montevideo, proved to be new to science.

A species of microlepidoptera—*Pyroderces crawfordi* Walsingham—from Tahiti, was also previously unknown, and another specimen of this group of little moths—*Heliostobes mathewi*—from Valparaiso, forms the only other known specimen in addition to the type.

Second Voyage.

The second voyage upon which we started from Cowes on 18th December, 1903, was to the West Indies. Our party for this cruise consisted of Lord Crawford, Mr. C. R. Pawson, Dr. R. C. MacWalters, and myself, though at Barbadoes

we were joined by Colonel C. E. Swaine, who visited all the West Indian Islands with us, but left us at Florida for a trip through the United States.

The voyage occupied about five months, and after calling at the Canaries for coal we steamed across to Barbadoes, thence to St. Lucia, St. Vincent, and Grenada, afterwards running up the entire chain of islands to Jamaica, the Caymans, and then on to Cuba. Thence we proceeded to Florida, where some excellent tarpon fishing was enjoyed, and after a flying visit to Key West, for the purpose of coaling, we returned home *via* Bermuda and the Azores, reaching Cowes on 8th May, 1904. An itinerary of this voyage is appended:—

Madeira, 24th to 27th December, 1903;
Teneriffe, Canary Islands, 28th December to 1st January, 1904;
Barbadoes, West Indies, 15th to 21st January;
St. Lucia, 22nd to 25th January;
St. Vincent, 25th to 27th January;
Cariacou, 27th to 28th January;
Grenada, 28th January to 1st February;
St. Lucia (second visit), 2nd to 5th February;
Martinique, 5th to 7th February;
Dominica, 7th to 10th February;
Montserrat, 10th to 12th February;
St. Kitts, 12th to 15th February;
Antigua, 15th to 17th February;
St. Kitts (second visit), 17th to 18th February;
St. Croix, 19th to 21st February;

St. Thomas, 21st to 24th February;
Porto Rico, 24th to 26th February;
Jamaica, 29th February to 8th March;
Grand Cayman, 9th to 13th March;
Little Cayman, 13th to 14th March;
Havana, Cuba, 17th to 21st March;
Punta Gorda, Florida, 22nd March to 4th April;
Key West, Florida, 5th to 8th April;
Bermuda, 13th to 20th April;
St. Michael's, Azores, 29th April to 2nd May;
Cowes, 8th May.

The number of birds obtained during this trip to the West Indies somewhat exceeded four hundred, of which the following three proved to be new to science:—

Dendrœca crawfordi, from Little Cayman;
Vireo laurae, from Grenada;
Pitangus caymanensis, from Grand Cayman.

The birds found in all the West Indian Islands are of great interest, as no two islands have an avifauna exactly similar, so that all our collections were of value. The Cayman Islands specimens are worthy of particular notice, as nearly all the resident birds are peculiar to the islands, and there were previously very few specimens from this locality in the British Museum.

About one hundred fishes and reptiles were also obtained, but not one was new, nor were there any of great rarity. The most interesting, perhaps, were the five fine specimens of tarpon, which we caught off the Florida coast. These ranged in size from 40 to 95 pounds in weight,

SACRED IBISES (ABOUT 2 MONTHS OLD) FROM DASSEN ISLAND.
(See Chapter VII.)

and I preserved the skins of four of them on our homeward voyage.

About two hundred butterflies, moths, and other insects were also obtained.

The most interesting islands visited during our sojourn in the West Indies were Martinique, famous for its volcanic eruptions in 1902, and the Cayman Islands, which have been but seldom visited by a naturalist.

Third Voyage.

It was not until the autumn of 1905 that I again set out in the "Valhalla" on my last and, perhaps, most interesting voyage.

On this cruise we had a somewhat larger party, for besides Lord Crawford, the Hon. Walter Lindsay, Dr. A. Dean, and myself, Mr. E. G. B. Meade-Waldo was invited to accompany us for the purpose of collecting insects, and thus I was able to devote my whole time to birds, mammals, fishes, and reptiles, with the consequence that examples of several new species were obtained.

We sailed from Cowes on 8th November, 1905, and, after calling at Las Palmas, ran down amongst the South Atlantic Islands to the Cape of Good Hope; thence northwards through the inhospitable waters of the Mozambique Channel to Madagascar and the little-known islands which lie to the north-west. After visiting the Seychelles we returned home *via* the Suez Canal,

completing a voyage of seven months, during which time we had covered about 19,000 miles. The following is the detailed itinerary :—

Las Palmas, 13th to 16th November, 1905;
Put back to Las Palmas owing to illness of one of the crew—17th November;
St. Paul's Rocks, 2nd December;
Bahia, 10th to 30th December;
South Trinidad, 3rd to 5th January, 1906;
Martin Vas, 5th January;
Tristan da Cunha, 17th to 20th January;
Cape Town, 28th January to 8th February;
Durban, 14th to 15th February;
Mayotte, Comoro Islands, 23rd February to 3rd March;
Diego Suarez, Madagascar, 4th to 9th March;
Glorioso Island, 10th to 11th March;
Assumption Island, 12th to 13th March;
Aldabra, 13th to 16th March;
Aground on Assumption, 16th to 17th March;
Mahé, Seychelles Islands, 22nd March to 2nd April;
Praslin and Felicité Islands, Seychelles, 2nd to 5th April;
Mahé (second visit), 5th to 8th April;
Aden, 14th to 17th April;
Suez, 23rd April;
Port Said, 24th to 27th April;
Gibraltar, 5th to 8th May;
Cowes, 13th May, 1906.

The results obtained during this voyage were more important than those of the two preceding ones.

The collection of bird-skins, numbering five

hundred, contained specimens of eight species new to science. Besides these there were many rarities, few of the birds of the small coral islands to the north-west of Madagascar having been previously represented in the National collection.

The new species discovered were as follows:—

A white tern (*Gygis crawfordi*) from South Trinidad;

A diving petrel (*Pelecanoides dacunhae*) from Tristan da Cunha;

A paradise-flycatcher (*Terpsiphone lindsayi*) from Mayotte, Comoro Islands;

A swift (*Cypselus mayottensis*) from Mayotte, Comoro Islands;

A ground-cuckoo (*Centropus assumptionis*) from Assumption Island;

A turtle-dove (*Turtur assumptionis*) from Assumption Island;

A heron (*Butorides crawfordi*) from Assumption Island;

A sunbird (*Cinnyris mahéi*) from Seychelle Islands.

Many fishes and reptiles were collected, but none of these proved to be new or of great interest, except a large specimen of the ribbon-fish (*Regalecus*), which was obtained at Cape Town. This fish is rare in collections, its pelagic habits making its capture difficult.

Of the insects obtained I learn that several belong to new species, or are otherwise rare or

important, but at present I believe nothing has been published concerning them.

The most interesting islands visited were undoubtedly South Trinidad, Dassen Island, Glorioso, Assumption, Aldabra, the Comoros, and Seychelles, all of which have been fully dealt with in their proper place in the following pages.

This, then, is a brief outline of my three voyages on the "Valhalla," and if some of the notes in the following chapters are not as full as is desirable I must remind my readers that our stay in many of the "ports of call" was of very short duration—a difficulty only to be expected on a long voyage, when coaling or other necessary though wearisome proceedings effect frequent delays in the larger ports.

If, however, my account of our experiences should at some future time prove of use to any of my readers who themselves set off for these distant parts of the world in search of natural history treasures, or if the following pages give to the reader even a fraction of the pleasure which I myself experienced in visiting the islands therein portrayed, I shall feel that the book has not been written wholly in vain.

M. J. N.

Giza, Egypt.
January, 1908.

SACRED IBISES (ABOUT 4 MONTHS OLD) FROM DASSEN ISLAND. (See Chapter VII.)

A VOYAGE ROUND AFRICA.

SKETCH-MAP TO SHOW THE COURSE OF THE VOYAGE ROUND AFRICA.

CHAPTER I.

SAINT PAUL'S ROCKS.

SAINT PAUL'S ROCKS, situated in mid-Atlantic, about 540 miles from the nearest point of the coast of South America, and 15 miles north of the equator, are probably the most interesting rock-islets in the world.

Roughly about half a mile in circumference, this group is composed of five peaks of rock, the highest of which is only 64 ft. above the level of the sea. Darwin has stated* that Saint Paul's group is not volcanic, and thus forms the only island in the world, with the exception of the Seychelles, that is of neither volcanic nor coral formation.

These rocks are surrounded by deep sea, and the Challenger Expedition could discover no ridge under the sea to connect them either with the mainland or with the islands of Fernando de Noronha, about 200 miles to the south.

Owing to their small size, Saint Paul's Rocks cannot be seen, even in clear weather, from a

* "Voyage of the 'Beagle.'"

greater distance than eight miles. Their appearance from a short distance is most peculiar, the two highest peaks being white with the droppings of the numerous sea-birds which nest on them, while the remainder are of a deep greenish-black, very dark in contrast to the white peaks. The outlying rocks, as can be seen during the fall of the swell, are much worn below the water-line.

My first visit to these interesting rocks was made in 1902, during my first voyage with Lord Crawford in the "Valhalla." They were sighted from aloft at 1.30 p.m. on the 17th December, and shortly afterwards became visible from the deck.

Numbers of gannets appeared and circled round the yacht, while, as we gradually drew near, great numbers of birds were to be seen flying in all directions round the highest peaks.

At 3.30 we were close in, and shortly afterwards a boat was lowered and we set out for the shore. The weather was perfectly fine, but, owing to a slight swell, the surf was breaking on the rocks in a most forbidding manner. As we rowed closer, however, we found that, by waiting and choosing the right moment, the boat could be backed in to a projecting portion of the rock, and then, as we rose on the swell, it was not difficult to jump ashore.

Accordingly we backed in carefully, and took our turn to wait for the lift of the swell and then

jump. At one moment the rock towered above us, at the next the boat flew upwards until it was level with the landing place—then was the time to jump, and as one jumped the boat was pulled out clear of the surf. Thus one by one we landed safely.

As soon as we were ashore we noticed a vast number of crabs* crawling about in all directions. Some of these crabs were of a green colour; these were the smaller and more numerous, perhaps the younger ones, while others, which were larger, were of a bright vermilion.

The landing place we had chosen was at the foot of the highest peak, which Moseley calls Booby Hill,† and certainly this name is well chosen, for the peak was covered with boobies, a species of gannet—*Sula leucogaster*—and their nests were so close together that it was almost impossible to walk without stepping on either eggs or young. The young boobies, sometimes two in a nest, were of all ages, from bare, newly-hatched chicks to fully-fledged young.

The nest of this gannet is merely a collection of old and dirty feathers and loose stones. Round about each nest were quantities of flying fishes in all stages of decay, brought there and disgorged by the parent birds as food for the young. The freshest part of this food supply, we soon discovered,

* *Grapsus strigosus.*

† "Notes of a Naturalist on H.M.S. 'Challenger.'"

made excellent bait for the innumerable fishes which swarmed round the rocks; but as we found later, by accident, the best and freshest bait was to be procured by gently prodding an old gannet while it was sitting on its nest, when it would at once disgorge a fish.

It was by no means pleasant to walk about amongst these nesting birds, and, indeed, we found it to be a most painful proceeding, as both old and young pecked viciously at our legs. The young birds were especially annoying, and would get out of their nests and follow us, snapping savagely at our legs with their long sharp bills.

At the base of Booby Hill I came on a colony of noddy terns.* This bird lays its single egg on the bare rock. Most of the eggs were hard set, and there were many young ones of various ages. Although very tame, the noddies were not so bold as the boobies, and we did not succeed in catching more than one adult bird of this species with our hands.

Running about among the noddies we saw a turnstone,† a well-known visitor in the spring and autumn to the shores of the British Isles. In the winter it is distributed practically over the whole world. This bird has not hitherto been recorded from Saint Paul's Rocks, however, and it was probably resting there while on migration.

Besides the birds already mentioned, a second

* *Anous stolidus.* † *Strepsilas interpres.*

ST. PAUL'S ROCKS, MID-ATLANTIC.

species of noddy tern—*Micranous leucocapillus*—a smaller and darker bird than the common noddy, was seen and obtained. This small tern was not nearly so abundant as the larger species, and it was not found nesting on Booby Hill. It was also far more shy, and specimens were only obtained with difficulty.

Thus there are only three species of birds which nest on Saint Paul's Rocks, and they appear to breed all the year round. The naturalists of the "Beagle" landed there in February, those of the "Challenger" in August, while we were there in December, and on all of these occasions both eggs and young were found.

One of the sailors landed with us in the boat to collect eggs for eating purposes. Whether any of the crew ate any I never heard, but as nearly all those we obtained were hard set, I should imagine they did not. I have a vivid recollection, too, of being called up in the small hours of the following morning, with the news that several of the eggs had hatched during the night.

From the top of the highest peak one could get a good view of the rocks. They are divided up into groups of jagged peaks, each group being separated from its neighbour by a channel through which the sea rushes with great violence. The rock on which we landed appeared to be the largest, both in height and circumference.

At the foot of Booby Hill were several tidal

pools in which many species of small fishes were seen, but all attempts to catch them with a net proved futile. A great many fish were, however, caught in the sea by fishing from the rocks. Of these a species of "cavalli" weighed in some cases as many as twelve pounds. Fishing here presented a somewhat unusual difficulty, for sharks swarmed in incredible numbers, and it was a difficult task to avoid hooking them instead of more serviceable game; indeed, so numerous were the sharks that, on our return to the ship, we found that during our absence no less than twenty had been caught, all of them at no greater distance than two hundred yards from the shore.

As to the other inhabitants of the rocks, Darwin mentions the following: A pupiparous fly (living as a parasite on the booby), a beetle (*Quedius*), a tick, a small brown moth belonging to a genus which feeds on feathers, and a woodlouse. Moseley says: "We found two species of spiders . . . . and, in addition to the insects noted by Darwin, the larva of a moth, apparently a *Tortrix*, and a small dipter . . . . but could not find either the beetle or woodlouse."

We searched carefully and obtained specimens of the feather-feeding moth, a tiny beetle, and a small cricket, but failed to find either the woodlouse or the spider. The pupiparous fly was, however, noticed on the booby.

The heat on Saint Paul's Rocks was intense,

the sun, beating down on the bare rock, made the place like an oven, and the only shade was that thrown from Booby Hill towards evening.

Shortly before sunset we went on board, fully determined to land the next morning on another part of the rocks. Getting off was, we found, a much more difficult business than landing, but at last it was safely accomplished. Several fishes and one bird were dropped into the water during the process of embarkation, and they were immediately taken by sharks, so it was just as well that none of our party slipped into the water. Perhaps a shark is not so dangerous to human beings as it is usually supposed to be. That there are some sharks which will attack a man in the water is, of course, certain, but I think that there are not very many that will do so.

During two visits made to Saint Paul's Rocks we tried to ascertain the nature of the food of these sharks. We cut open and examined at least thirty of them, but in only one did we find the remains of food—a half-digested fish. Of what, then, does their food consist? It seems incredible that they can feed entirely on fishes, as anyone will realise who has seen the slow, almost lazy, way in which they take their prey. Judging from the enormous number of sharks round Saint Paul's Rocks, there should be a great supply of food. Of course it is possible that they can exist for a length of time without food. That

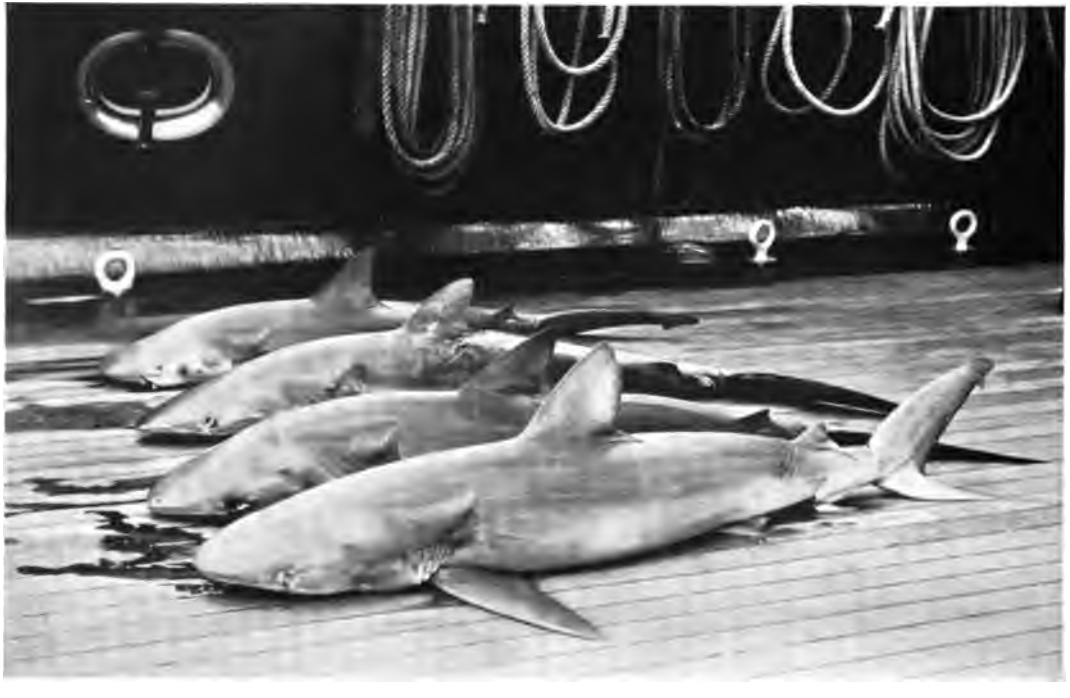
they go elsewhere for their food is not likely, as these rocks are far away from any other land.

During our second visit a shark, which had been shot with a rifle, sank, and as all its companions, of which there were a great number round the ship at the time, followed it down, and on reappearing refused to look at our baits, I imagine that they devoured it.

During the night of 17th December we steamed slowly away from the rocks, but at daylight we returned, and, lowering a boat, again landed. This time we went ashore on one of the rocks at the further end of the bay, which is formed by the semi-circular nature of the group.

The weather being even finer and the sea smoother than on the previous day, we landed without difficulty, and at once climbed to the highest peak of this rock, which is 60 feet in altitude, and the second highest of the group.

Here I was delighted to find the nests of the smaller noddy tern, which I have mentioned as having been seen on the previous day. This bird lays its egg in a most curiously constructed nest. A mass of fine seaweed is cemented to a small jutting ledge of rock, the cement being formed of the droppings of the birds. We found altogether four of these nests, each of which contained a single egg. A few of the larger noddies were also breeding here, but these, as on Booby Hill, had laid their eggs on the bare rock, without



SOME OF THE SHARKS CAUGHT OFF ST. PAUL'S ROCKS.

making any attempt at a nest. Moseley, in describing these bracket-like nests, suggests that it is only the strongest birds that take possession of the favourable points of the rock on which they are placed, although he adds a footnote to the effect that at the time of his visit he did not realize that two species of noddies inhabit Saint Paul's Rocks. It is, however, quite obvious that it is not the strongest birds, but only the smaller noddies, which occupy these ledges, since the larger noddy was in no instance found nesting upon them.

This day, while we were on the rocks, a ship passed by, close in. It is only occasionally that ships sight these rocks, and then only to determine their exact position. No one, it is almost certain, had landed on Saint Paul's Rocks since the visit of the "Challenger" until we were there just twenty-nine years later.

At 4.30 p.m. on the 18th December we sailed away, bound for Fernando de Noronha, and as I stood on deck and watched these interesting little islands fading away in the distance, I little thought that in three years' time it would be my fortune to see them again.

It was on my third voyage in 1905, while on the way to Brazil, that Lord Crawford suggested that we should renew our acquaintance with these little-known islands. Shaping our course accordingly, we sighted the rocks on 2nd December,

and, after a few minutes' steaming, drew up close to our former landing place.

The weather was, unfortunately, by no means so kind on this occasion as on our former visit. A strong wind was blowing, and the surf was breaking with great fury on the foot of Booby Hill. It might have been possible to land, but we decided that, under the conditions prevailing, it was too risky to venture close to the rocks, therefore we were forced to content ourselves with a distant view of the boobies.

Some time was, however, spent over shark fishing, and we had hopes that the weather might improve. A number of sharks were caught, and in this way we spent the greater part of a day. As the sea was still high at sunset, Lord Crawford decided that it was not worth while to remain longer, so we sailed for Bahia, Brazil.

During this visit to Saint Paul's Rocks we noticed that the birds were present in about the same numbers as before. Boobies of all ages were flying round the ship the whole time we were there, and many noddies were also seen.

CHAPTER II.

FERNANDO DE NORONHA.

On 20th December, 1902, the island of Fernando de Noronha was sighted, and at 4 p.m. we dropped anchor off the settlement.

On the island is a Brazilian convict settlement, and permission to land is by no means easy to obtain. The "Challenger" Expedition was not allowed to make collections there, and Mr. Ridley, who visited the island in 1887, was, previously to our visit, the only naturalist who had collected with any thoroughness. Of the three species of land-birds which he obtained, two proved to be new to science.

It was therefore a matter of great satisfaction that, by the courtesy of the Governor of the island, we were allowed to land and make natural history collections, and not only that, but were also generously provided with guides and horses.

The most remarkable physical feature of Fernando de Noronha is a gigantic column of rock standing erect on the highest peak. This

column appears to be a smooth mass of rock, and looks as if a slight push would send it headlong into the sea. Another marked feature, which is visible at a considerable distance, is an opening through the sea-cliff at the south-western extremity of the island. This boring has been made by the sea, and is known as the "hole in the wall."

Just opposite our anchorage, and close to the settlement, there was also a magnificent "blowhole" in the cliff, through which the air was driven, by the rise and fall of the sea, with a loud roar every few seconds.

The island slopes gradually upwards from the sea, and its general appearance from a little distance is green and fertile. When we landed we found that the cause of this apparent fertility was a thick growth of fig trees, which covered most of the island. Maize is, however, grown at certain seasons of the year, and in a letter received by Doctor Macdonald some months after our visit, one of the Englishmen living on the island describes it as looking very green and fresh, owing to the abundance of the maize crop.

As soon as a boat had been lowered we started for the shore. The surf was breaking with such fury on both the charted landing places that we were forced to abandon the idea of getting in at these spots; but we found that, by backing the boat to a jutting mass of rock, we could, with a little difficulty, scramble ashore.

The Governor, accompanied by two Englishmen who manage the telegraph and Lloyd's signal station, had come down to meet us, and, thus accompanied, we proceeded to the settlement, where arrangements were made for a collecting expedition on the following day.

While we were at the Governor's house a bugle was sounded to summon the convicts. There were about 200 of them, all under long sentences, most of them having been convicted of murder. One man, who was told off as a guide to our party, was said to have committed seven murders, and as he owned to five of them, I have no doubt that we were correctly informed.

After their names had been called, the convicts dispersed for the night, about fifty being locked up in the gaol, and the rest going off to their own houses. Most of these men have wives and families, and, as far as we could judge, their lives were not hard. They have to work three hours a day for the State, but the rest of the day they can spend as they like, though all have to appear when the bugle is sounded in front of the Governor's House.

Shortly after the convicts had dispersed we started for the landing place. At its best this is a difficult place from which to embark without getting wet, and it was seldom that we landed there or got away without getting soaked by the waves.

The next morning we landed early, and, walking to the settlement, were met by our English friends, who had procured ponies for us on which to cross the island. During our ride I saw a pair of white terns (*Gygis* sp.), the most beautiful of all the tropical sea-birds. Later on we saw many of these terns in the various islands we visited, and, whether hovering over the deep blue sea of the South Pacific, or sailing round the palms of a coral island in the Indian Ocean, they seem equally at home; wherever they were seen the snow-white of their plumage and the deep dark blue of their eyes made them ever memorable.

At the base of the column on the peak we made our first acquaintance with frigate birds,* which were sitting in numbers on some bushes; their scarlet pouches were extended, and looked in the distance like large red blossoms. It is only in the breeding season that frigate birds develop this curious ornament. When closely examined it is seen that the pouch is formed by a bare patch of skin on the throat, which can be expanded by the bird at will. At times a great bladder as large as a football is thus formed. When the bird is taken in the hand and carefully examined, the whole of the body appears to be inflated. On skinning the bird it is at once seen that the whole body is enveloped with a mass of air cells. The pouch is only an exaggerated form of such an air

* *Fregata aquila.*

cell, and, being larger than those on the rest of the body, is more noticeable.

In the breeding season the pouch is constantly being inflated, and, as a consequence, the skin of the throat becomes stretched to such a degree that when not inflated it hangs down in a loose fold below the bill of the bird. It is only the males that are able to inflate these pouches in this way, the female having a non-inflatable patch of bare skin of a duller colour on the throat. We afterwards found that by inserting a bicycle pump into the larynx of a freshly-killed male frigate bird and pumping air into the throat, the whole of the body, as well as the throat, becomes inflated.

Along the shore we saw a species of the tropic, or bo'sun, bird. This proved to be *Phaethon lepturus*, and two fine specimens were obtained by Lord Crawford. Several of them were flying along the face of the cliff. The name "bo-sun" is said to have been given to this bird on account of its cry, which is supposed to resemble the pipe of a boatswain's whistle. It must be confessed, however, that the only cry we heard it utter was a harsh scream not unlike that of a tern.

A dove known as *Zenaida auriculata*, which was originally, without doubt, introduced from the mainland of South America, was extraordinarily abundant on this island. They were very tame

and fearless, but were not nesting at the time of our visit. Their note is a loud rattling "coo."

Insects were not very numerous—bees, dragon-flies, beetles and crickets being the most noticeable, while a little blue butterfly was frequently seen fluttering along at our feet in the pathways through the groves of fig trees.

In the houses we collected a number of mosquitoes, apparently of one species only. It seems that it is only in the houses that mosquitoes are troublesome, as, during the whole of the time we were on the island, we were not attacked by these pests out-of-doors, and it was only when we entered a house that they became a nuisance.

We went to the furthest extremity of the island in a north-west direction from the settlement. Here we found that the low fig trees, which seem to be the principal trees of the island, were growing in greater abundance than near the settlement.

In these trees numbers of small birds, which in general appearance much resembled reed-warblers, were flitting in and out among the leaves in search of insects. These birds proved to be all of the species called *Vireo gracilirostris*. Their loud, but by no means unpleasant, song somewhat resembled that of a pied wagtail, so familiar as a British bird.

This part of the island was steep and precipitous. We followed a path which took us down to the seashore about one hundred feet below, and here

FRIGATE BIRDS ON GLORIOSO ISLAND.
(See also Chapter X.)

we noticed numbers of sooty terns,* which were flying in a perpetual stream along the coast, just above the breaking waves. These birds were not nesting at the time of our visit, but we were told that they bred in great numbers on one of the smaller islets, which lies about half a mile off the settlement. A few tropic-birds, which were flying high overhead, appeared from their manner to have nests, which were probably situated in the most inaccessible parts of the cliff.

The tide was low, and we were able to walk some distance along the shore. A long ledge of rock was pointed out to us by one of our friends as an excellent place for fishing, and in many shallow pools we saw numbers of brilliantly coloured fishes; some of these were blue on the back and yellow beneath. We made repeated attempts to capture them, but to no purpose.

It is impossible to make a collection of the whole fauna of an island during a visit of two or three days, as we soon realized; consequently I spent most of my time searching for the three species of land-birds which inhabit Fernando de Noronha. Specimens of the dove and the warbler, which have already been mentioned, were collected during the morning. As soon as we returned from our excursion across the island a visit was paid to the Governor's garden, where, owing perhaps to the greater abundance of trees, birds were more

* *Sterna fuliginosa.*

numerous, and the third species of land-bird, a flycatcher,* was met with.

In this garden, which was nicely laid out and enclosed by an iron fence, were many large cocoanut trees bearing a quantity of fruit. There were also some sapodillas, the fruit of which was ripe at this time. It is greatly appreciated by the people on Fernando de Noronha, and we were persuaded to taste it. Externally it somewhat resembles a small round potato; the flavour, however, is too much like that of the mango, the suggestion of turpentine which pervades the latter fruit being distinctly noticeable in the sapodilla.

Doves were swarming in the garden, every tree and bush being apparently tenanted by them, and the Governor showed us a cage full which had recently been caught. They were, he told us, excellent to eat.

There are no indigenous mammals on Fernando de Noronha, but rats† and mice‡ have been imported or have escaped from ships. I did not get any rats, but two mice which we shot were of a pale fawn colour, and probably differed in colour, at all events, from those of their ancestors which first appeared on this island. One of the outlying islets is called "Rat Island," but we were informed that rats were no more numerous there than on the main island.

Close to the place where we embarked, we

* *Elainea ridleyana.* † *Mus rattus.* ‡ *Mus musculus.*

noticed a thick-stemmed plant covered all over with small spikes, and bearing leaves like those of the geranium. We were warned by our friends that this plant, when touched, gave a most painful sting. Moseley mentions that, although he used the greatest care when securing a specimen, he got a sting, the results of which he felt for several days afterwards. We afterwards saw this same plant in Brazil.

During the second day of our stay on Fernando de Noronha a steamer, which visits the island once every month, arrived, bearing mails for the inhabitants. The advent of the steamer is much looked forward to, as life on Fernando de Noronha for a European is dull in the extreme.

As soon as the boat arrived a large raft was pushed off from the shore and anchored outside of the surf. The raft resembled in shape a large table, the legs of which were fixed to a platform composed of a number of logs lashed together. A boat was sent off from the steamer loaded with packages of stores, clothing, letters, and other things, and these were put on to the raft, from which they were landed in native catamarans.

The catamarans, which are built on the same principle as the large raft, are of sufficient size to carry one person with comfort besides the native oarsman. They are especially adapted for landing through surf, and they ride over the breaking waves with wonderful buoyancy.

We once landed in a catamaran, and all of us got ashore with no more than wet feet. In Brazil we frequently landed through surf in the same way, though the catamarans there are larger and are propelled by two natives.

Our time ashore on this second day was limited, and we did not get very far beyond the settlement. Major Wilbraham and I walked for some distance along the shore, and saw the same species of birds as at Saint Paul's Rocks, but we noticed that the turnstone appeared to be quite numerous.

There are, I believe, two species of lizards on the island, but we only saw one of them. This was *Mabuia punctata*, and it seemed to be a most abundant species on every part of the island.

As we had many other interesting places to see, our stay on Fernando de Noronha was of necessity very short, and after two days we set sail for Bahia, in Brazil. It is probable that in a few years' time Fernando de Noronha will cease to exist as a convict settlement. We were informed that as capital punishment had taken the place of exportation for life in Brazil, no more convicts were to be sent there.

CAMP ON ITAPARICA ISLAND.

CHAPTER III.

ITAPARICA, BAHIA.

DURING the three cruises of the "Valhalla," we made two visits to Bahia. On the first occasion we landed on 26th December, 1902, Christmas Day having been spent in sight of the coast of Brazil, while on the second we dropped anchor in the Bay of All Saints on 10th December, 1905.

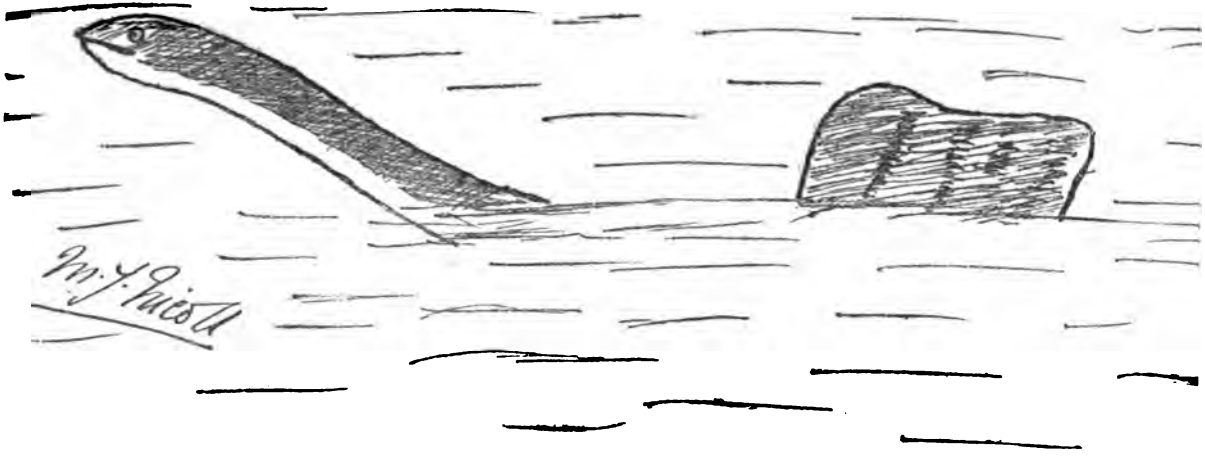
Some six miles from the town lies Itaparica, a large island inhabited by about 30,000 people, and it was here that most of our time (a fortnight on each occasion) was spent. During our first visit some time was occupied in finding the most suitable places for landing on this island, and also in searching for the best spots for collecting birds, butterflies, and other specimens. What we learnt on this occasion, however, proved of the greatest assistance during our second visit, as we were then able to find the passage through the reef with little difficulty, and go at once to our old collecting grounds.

Before describing our doings at Bahia, I must refer in detail to an important incident which

occurred on the high seas during our second voyage thither.

On the 7th December, 1905, when in latitude 7° 14′ S., longitude 34° 25′ W., and about fourteen miles from the coast of Brazil near Para, a creature of most extraordinary form and proportions was sighted by two of us. At the time we were under sail only, and were slowly making our way to Bahia. It was at about 10 o'clock in the morning, and I was leaning on the rail of the poop deck, when a large fin suddenly appeared close to the ship at a distance of about fifty yards. This fin resembled that of no fish I had previously seen, and I pointed it out immediately to Mr. E. G. B. Meade-Waldo, who was on deck with me at the time, and we watched it together for several minutes. As we passed slowly by, a long eel-like neck surmounted by a head, shaped somewhat like that of a turtle, rose out of the water in front of the fin. This creature remained in sight for a few minutes, but we soon drew ahead of it, and it became lost to view, owing to the ripple of the water. Owing to the fact that we were under sail at the time, it was not possible to go about and make a closer inspection, and with great regret we had to be content with the view we had had of this remarkable monster.

A full account of it was given at a meeting of the Zoological Society of London, on 19th June, 1906, and I quote below from the report which was



SKETCH OF MARINE ANIMAL AS SEEN BY MR. E. G. B. MEADE-WALDO AND THE AUTHOR OFF THE COAST OF BRAZIL.

(From the *Proceedings of the Zoological Society.*)

printed in the "Proceedings" of that Society (10th October, 1906, p. 721):—

"At 10.15 a.m., on Thursday, 7th December, 1905, when in lat. 7° 14′ S., long. 34° 25′ W., in a depth of from 322 to 1,340 fathoms, Meade-Waldo and I saw a most extraordinary creature about 100 yards from the ship, and moving in the same direction, but very much slower than we were going. At first all that we could see was a dorsal fin, about four feet long, sticking up about two feet from the water; this fin was of a brownish-black colour, and much resembled a gigantic piece of ribbon-seaweed. Below the water we could indistinctly see a very large brownish-black patch, but could not make out the shape of the creature. Every now and then the fin entirely disappeared below the water. Suddenly an eel-like neck, about six feet long and of the thickness of a man's thigh, having a head shaped like that of a turtle, appeared in front of the fin. This head and neck, which were of the same colour above as the fin, but of a silvery-white below, lashed up the water with a curious wriggling movement. After this it was so far astern of us that we could make out nothing else.

"During the next fourteen hours we went about twice, and at about 2 a.m. the following day (8th December), in lat. 7° 19′ S., long. 34° 04′ W., the first and third mates, Mr. Simmonds and Mr. Harley, who were on the bridge at the time, saw

a great commotion in the water. At first they thought it was a rock a-wash about 100 to 150 yards away on the port side, just aft of the bridge, but they soon made out that it was something moving and going slightly faster than the ship, which at that time was doing about 8½ knots. Mr. Simmonds hailed the deck, and one of the crew, who was on the look-out, saw it too. Although there was a bright moon at the time, they could not make out anything of the creature itself, owing to the amount of wash it was making, but they say that from the commotion in the water it looked as if a submarine was going along just below the surface. They both say most emphatically that it was not a whale, and that it was not blowing, nor have they ever seen anything like it before. After they had watched it for several minutes, it 'sounded' off the port bow, and they saw no more of it."

This creature was an example, I consider, of what has been so often reported, for want of a better name, as the "great sea-serpent." I feel sure, however, that it was not a reptile that we saw, but a mammal. It is, of course, impossible to be certain of this, but the general appearance of the creature, especially the soft, almost rubber-like fin, gave one this impression. It is often said that, if there were such a monster, remains of it would have been found long ago, but this is not necessarily so. Supposing the "sea-serpent"

lives in deep holes, such as there were in the spot where we saw our "monster," then there would be little chance of remains being washed ashore, and the amount of deep-sea dredging that has yet been done is very small, so that it is not surprising that no parts of this creature have been obtained in that way.

That it is not more often reported is not to be wondered at, when one realizes how often it is that a ship may sail for days together without sighting another ship, even in seas where there is considerable traffic. Also it must be remembered that such ridicule is generally bestowed on the reports of sea-monsters that many persons hesitate to describe what they have seen. I know myself of several instances of unknown sea-monsters having been seen by reliable witnesses, who, to avoid the inevitable "chaff," would not publicly state their experiences.

* * * *

The town of Bahia has a striking and picturesque appearance from the harbour, white houses peeping out here and there from luxuriant vegetation. But "distance lends enchantment to the view," and when on shore the narrow and filthy streets, and the general untidiness of the whole place, quickly dispel the illusion of cleanliness.

During my two visits to Bahia I spent as little time as possible in the town. A run of some forty

minutes in our steam launch took us across to Itaparica, where, after passing through a passage in the reef, we landed in a small "Berthon" boat. A great part of the island has been cleared, and it required over an hour's walk to reach the nearest patch of virgin forest. The luxuriance of the vegetation in a Brazilian forest is truly wonderful; even at mid-day in the thickest part of the forest one might imagine it was twilight, owing to the density of the foliage. Brightly coloured birds and butterflies are met with at every step, and it would seem that in every patch of forest there are different species of birds, while every hour of the day brings forth new forms of butterflies.

It was on this island that we first saw humming-birds, a large blue species* being the most abundant. We were rather surprised to notice how frequently these birds perch. I had always accepted it as a general belief that humming-birds seldom settled, but were nearly always on the wing. Since this, my first acquaintance with these exquisite little birds, I have had the good fortune to meet with examples of many other species of humming-birds in South America and the West Indies, and have noted that they are as often at rest on the trees as hovering round the flowers in search of food. All the specimens obtained were carefully examined during the process of skinning,

* *Eupetomena macrura.*

and in every instance their gizzards contained the remains of insects.

During our second visit to Brazil we camped out for four nights on Itaparica. Our tent was pitched near one of the patches of virgin forest, and at no great distance from a small lake, on the margins of which were numbers of jacanas,* a bird resembling a water-hen in shape, but provided with toes of such great length, that it can walk with ease over the floating leaves of the water-plants.

In the lagoon caimans or alligators were plentiful, and during the day several were always to be found either basking on the trunks of trees, which had fallen near the water, or lying in the water itself, with only their eyes and nostrils above the surface.

The near proximity of water to our camp was convenient, but at nightfall we realized that we had made a great mistake, for the mosquitoes swarmed in such numbers that sleep was impossible. A fire had been lighted previously, and arranged in such a way that the smoke blew through the tent, but the mosquitoes swarmed in notwithstanding, and after spending two nights of discomfort, we obtained mosquito nets and moved the tent to a greater distance from the water. After this we most of us were able to get a couple of nights' immunity from these pests. Two of

* *Parra jacana.*

THE LAKE, ITAPARICA ISLAND.

my companions, however, went out moth-catching at night and omitted to fold up their nets before they started, the consequence being that on their return the nets were full of mosquitoes, and a few weeks later they both suffered from a bad attack of malarial fever.

In spite of mosquitoes by night and grass-ticks by day, we all agreed that a short stay in the solitude of a Brazilian forest was a most delightful experience.

The first two nights there was sufficient moonlight to make shooting possible, and I spent a great part of the night in walking about round the camp. Several foxes were seen, and one of these I shot. The island abounds with foxes, and there are also a fair number of wild cats, but although several of the latter were seen, we did not succeed in shooting any. Every night I set a number of traps for small mammals, and, though I managed to get a few specimens, I found there were several difficulties to be overcome. In the first place the bait is almost at once devoured by ants, and this necessitates a constant series of visits to the traps. Then again the traps are continually sprung by animals which are too large for them to hold—such as opossums and foxes. Eventually I found that the only way to get any specimens of rats or mice was to set my traps just before nightfall, and then visit them at frequent intervals during the night, and in this way I managed to secure a few.

On several occasions we saw troops of marmosets travelling with extraordinary speed from tree to tree through the forest. From our tent a clearing of several acres, with here and there a small clump of mango trees, in which were numerous species of birds, extended to the lake.

About the camp itself there were always numbers of vultures of two species.* They showed not the least fear of us, and would descend almost at our feet to pick up scraps thrown out to them. The Brazilians protect these birds, and the penalty for killing one is a heavy fine. Another very common bird of prey is the caracara, a pair of which are to be seen in every patch of forest. We came across a pair of the pale grey variety of this species, and a very beautiful sight it was to see these birds circling round over the tree-tops. In appearance they reminded one somewhat of a buzzard when seen from a distance, but the tail is longer. A large hawk† was also often to be seen sitting on the dead palm trees, and three were shot for the collection, while on several occasions a large eagle was noticed sailing overhead, but never within gunshot. At night the cries of two kinds of owls were noticeable, and these proved to be a small scops-eared owl‡ and a large wood-owl; the latter, though seen, was not obtained. Numbers of night-jars of two species inhabited the forest

* *Cathartes aura* and *C. atratus*. † *Asturina nattereri*.

‡ *Scops brazilienseis*.

and clearings near our tent. The cries of these birds, quite unlike the loud reeling note made by the well-known species which we see in England, were loud liquid calls, which were only uttered, so far as I could ascertain, when the bird was on the ground.

During the day a scarlet tanager was continually seen in the trees and bushes near our tent, and another bird, most noticeable by reason of its numbers, was a small swallow.* This little brown-backed bird invariably appeared in great numbers directly after a shower of rain.

A shower of rain had a remarkable effect on the life in the clearing, for immediately afterwards there appeared immense swarms of flying ants. As soon as these ants arrived, they were followed by a great number of birds of all kinds—flycatchers (*Elainea*), tanagers, oven-birds, and woodpeckers appeared, while the little brown-backed swallow came in great numbers. The ants were at a disadvantage, and were not safe even when they had reached the ground, for here the woodpeckers followed them and swept them up with their long tongues.

I imagine that all these birds came from the neighbouring forests, as previous to the showers of rain not a bird was to be seen in the clearing. Another instance of birds appearing at certain places only when there are insects, was to be

* *Stelgidopteryx.*

seen round the lagoon, which a small spine-tailed swift* visited regularly in the evening when there were swarms of small flies, while at other times of the day, when flies were not numerous, not a single swift was observed there.

It would be tedious to mention individually all the birds seen during these visits to Itaparica, but there are two other species to which I must draw attention—one, because it is one of the most noticeable of Brazilian birds, and the other, because of its scarcity, as far as specimens in museums are concerned.

The first belongs to the family of tyrant-fly-catchers, which is numerously represented in Brazil. Several species were met with by us, but by far the most common was *Tyrannus melancholicus*—a bird of about the size of a thrush with a yellow breast, grey back, and a partially concealed golden-orange crest. It is to be seen in almost every tree, and is further remarkable for the monotonous cry which it utters continually.

The other bird to which I would refer is another member of the family of tyrants. This bird—*Myiarchus pelzelni*—is apparently scarce in collections, though why this should be it is difficult to say. It was quite common in the mango trees near our camp, and several were shot and skinned. Perhaps, however, Itaparica is particularly suited to its requirements, and it may be rare in other

* *Chaetura fumosa.*

parts. I think, however, that most likely it is confused with another bird of the same genus, viz., *M. ferox*, which is most abundant in Brazil, and closely resembles it when seen at a distance.

Every morning, about half an hour before dawn, we left our tent and walked through the woods to a large swamp about a mile away, where we had some fairly good shooting. A large flock of teal* was sometimes feeding on the mud surrounding a large pool of water, and a few snipe† were bagged, but, unlike snipe in general, they offered the easiest of shots. They behaved much like the jack snipe, rarely flying more than a few yards at a time, and always allowing of a close approach. The most numerous birds were, however, the jacanas, which were in enormous numbers, and as soon as we appeared on the spot they rose in large flocks and circled round us high overhead.

Many delightful hours in the early morning were spent in this way among the numerous different forms of bird and insect life. Daybreak in the tropics is undoubtedly the best time out of the twenty-four hours, for then the air is cool and invigorating—a great contrast to the rest of the day, when the heat becomes almost unbearable. The hottest part of the morning we usually spent in the thick forest, where, under the deep shade of the trees, it was possible to collect specimens without feeling the effects of the heat.

* *Nettion brasiliensis.* † *Gallinago delicata.*

After some experience I have found that the best, in fact the only, time to do really good work in the way of collecting in the tropics, is a few hours after daybreak, and again some two hours before dark. Only then can one work with comfort, but, what is more important, the birds at these times appear to be more numerous and more easily approached. Towards mid-day every sign of animal life seems to disappear, and there is no doubt that at that hour mammals and birds hide away in the comparative cool of the thickest part of the forest.

Altogether these few days in camp on Itaparica proved to be most interesting, and although we suffered to a great extent from mosquitoes and grass-ticks, from the latter especially, we were well pleased with our results.

The ticks were a source of great annoyance, and, in spite of all we could do to prevent them, they swarmed on our clothing and buried themselves in our skins. When once fixed in the skin it is a very difficult matter to remove them, as they quickly bury their heads, and if any force is used in removing them, their heads break off and remain in the flesh, where they often cause a bad wound.

The part of the island in which we were camped did not appear to be thickly populated. Along the shore there were a number of small houses tenanted mostly by fishermen, but in one or two

of the larger of these houses there were a few of the better-class Brazilians. These were traders from Bahia who rent these houses for the summer, and one of them, who procured porters for us, told us that he took a house on the island every year during the hot weather, as it was then far more healthy than at Bahia.

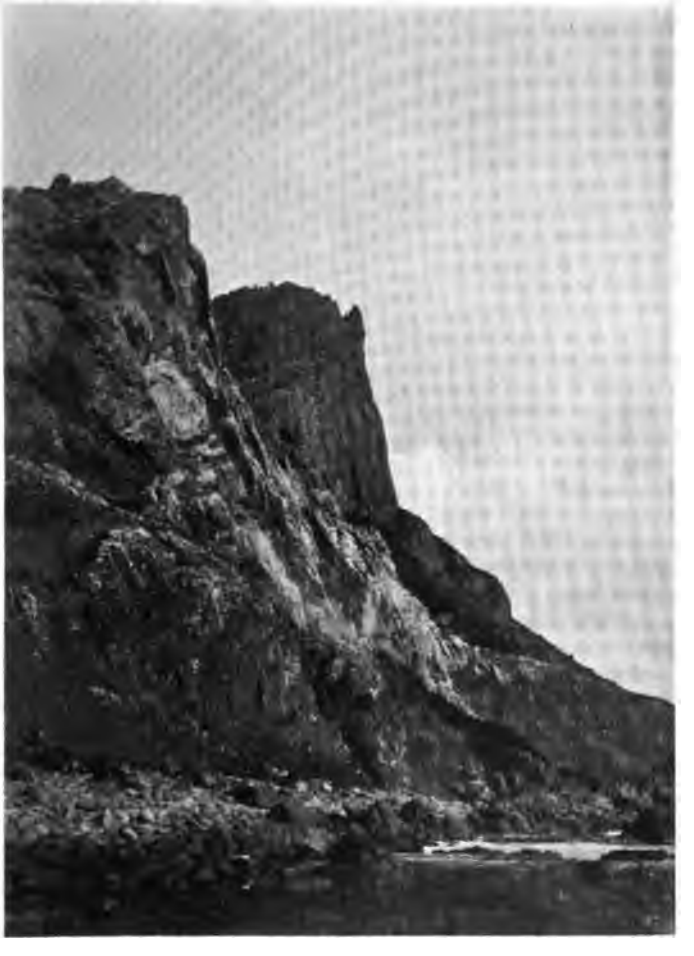
Occasionally a case of "beri-beri" makes its appearance among the natives in Bahia. All sufferers from this dreadful disease are at once sent across to Itaparica, and we were informed that they frequently recover when this is done, but if they remain in Bahia they usually die.

The population of Bahia and the surrounding country is of all nationalities, though the greater number appear to be negroes.

All these people are of the Roman Catholic religion, and they celebrate their Saints' days by a great display of fireworks. During the two visits of the "Valhalla" there were a number of these displays, and the continual banging of crackers at all hours of the day and night was infinitely less amusing to us than to the Brazilians.

On the occasion of our first visit, a great procession of boats filled with priest and choristers started from the shore and visited most of the ships in the harbour. When they arrived at a Brazilian ship they fired off a number of crackers which they had with them, and one of these ships, a Brazilian man-of-war, replied with a salute of guns. On

every Saint's day a procession takes place, generally on land, but on special occasions, as on this one, which was the day after Christmas Day, the ships in the harbour are visited.



SOUTH TRINIDAD ISLAND, NEAR THE LANDING PLACE.

CHAPTER IV.

SOUTH TRINIDAD.

At 6 o'clock on the morning of the 3rd January, 1905, the island of South Trinidad was sighted.

This island is situated in the South Atlantic Ocean off the coast of Brazil, lat. 20° 23′ S., long. 29° 43′ W. It is volcanic, and of the same formation as the coast of Rio de Janeiro.

South Trinidad had been visited by naturalists three times previously. In 1868 the Italian corvette "Magenta" came to the island, and two species of petrels were obtained and described as new to science by Dr. Giglioli.*

The second expedition was made in August, 1875, by Lord Crawford (then Lord Lindsay), who, when on the way to Mauritius to observe the transit of Venus, landed at South Trinidad and made a small collection of birds.†

Thirdly, on 13th September, 1901, the naturalists of the "Discovery," when bound for the Antarctic regions, landed there and made a collection.

* "Ibis," 1869, pp. 62-66.

† "Proceedings Zoological Society," March 2nd, 1880, p. 161.

Amongst the birds obtained by the last-named expedition were several specimens of a petrel, which Dr. Bowdler Sharpe described as a new species.*

As we gradually drew near to the island, the "Ninepin," a huge upright column of rock, came into view. This rock is several hundred feet in height, and in shape is much like an enormous tree-trunk. It was at one time undoubtedly of a much large diameter than now, long exposure to the weather having worn its surface away to such an extent that only the hard central core remains at the present time.

When we were within a mile or two of the island, we could see that the greater part of it was covered with grass, while against the sky-line at the extreme summit a mass of trees could be distinguished. Extending from the summit to the base were many fissures, which formed deep valleys, and these were thickly overgrown with tree-ferns.

Sea-birds, chiefly large petrels, appeared in numbers, and circled round the ship, while a good many gannets settled in the rigging.

A strong northerly gale was blowing, and Captain Caws had little hopes of the sea being smooth enough to lower a boat. As we drew under the lee of the island, however, the sea proved perfectly calm, and but little surf was beating on the shore.

* "Bulletin Brit. Orn. Club," XII., p. 49 (February, 1902).

TREE-FERNS ON SOUTH TRINIDAD ISLAND.

A large amount of treasure hidden in former days by pirates is said to be buried on South Trinidad, and Mr. E. F. Knight visited the island on two occasions for the purpose of searching for it.

We kept a careful look-out for the "Cascade" and the "Pier," mentioned by Mr. Knight in his "Cruise of the Alert." The "Cascade" was soon sighted, and proved to be a small trickle of water which had its source among the groves of tree-ferns near the summit of the island, and ran down a deep valley into the sea at a point about 200 yards from the jutting promontory of black rock which has been named so aptly the "Pier."

A boat having been lowered we started for the shore. On getting near in we met with several large turtles, which were swimming about close to the rocks. These turtles visit South Trinidad for the purpose of depositing their eggs, and during our two days' visit we saw many of them swimming about, but none were on the beach, and it is probable that we were too early in the year to find their eggs.

The boat was backed up to the natural "pier," and with one of the seamen I scrambled on to the rocks. At first it seemed doubtful whether the "pier" was connected with the shore, but we soon found that it was not difficult to climb over the huge boulders forming the "pier," and thus reach the strip of sand which fringes this part of the island.

Directly I had landed I was mobbed by a screaming crowd of white terns and noddies, which rose from their nesting-places on the rocks. So close to me did these birds fly, that I was able to touch them with the barrels of my gun.

Between the "Cascade" and "Pier" the coastline is slightly indented and fringed with a narrow strip of sand. Beyond the sand a mass of rocks had to be climbed before we could reach a plateau, which could be seen about 200 feet from the water's edge. After passing the rocky base of the hill, we found the rest of the way comparatively easy. The ground, which was covered with long wiry grass, was very treacherous, and slid away underfoot at every step.

Half-way up the slope the carpenter of the ship planted a board on which "Valhalla" was carved. This board was very thick and heavy, and will probably last for many years. We found the remains of several such boards on the island, but the names they originally bore were all illegible. We found also some letters painted in white on a huge rock on the plateau, but owing to long exposure to the weather this was also illegible.

This rock was covered with noddy terns and their eggs. The birds, which were of the same species as the large noddy met with on Saint Paul's Rocks, were very tame, and several photographs of them were taken at close quarters.

On the plateau are great numbers of fallen trees,

NODDY TERN AT THE NEST, SOUTH TRINIDAD ISLAND.

apparently of a species of acacia, which from all appearances have been dead for many years, though why they died it is impossible to say. They show no signs of having been destroyed by fire. The whole of the island is covered with these dead trees; some standing with their bare branches spread out as in life, and others lying in all positions. In some places so thickly is the ground strewn with them that it is difficult to force one's way through. When South Trinidad was first discovered it was thickly wooded, but no record seems forthcoming as to when and why the trees died. It may have been that some volcanic disturbance destroyed all the vegetation, but this seems unlikely, because on the summit of the island there flourish trees and tree-ferns which appear to be of a great age.

At one time a number of goats inhabited the island, but for many years these have disappeared, though the reason for this is also unknown. There is at the present time sufficient green food to support any number of goats, for, besides the grass, which covers the greater part, there are quantities of beans growing in masses on the fallen trees on the windward side.

As soon as we began to ascend to the plateau numbers of petrels appeared flying overhead; these were of two species, the most numerous being the *Œstrelata wilsoni* of Sharpe. About the size of a pigeon, this bird has a dark slate-

coloured back and head, with white, or in some individuals grey, underparts. These birds were just commencing to breed in the holes and crannies in the rocks. The other petrel (*Œstrelata trinitatis*), which is dark brown all over, with black legs and feet, was less numerous, but higher up the ravine a few were tending their well-grown young, which were sitting in hollows in the rocks and under overhanging ledges. The young birds were covered with long thick brownish-grey down, and resembled big "powder-puffs." They were extremely fat, and when handled they ejected a greenish fluid from their tube-like nostrils. The old birds circled overhead in great numbers and screamed at us angrily.

Occasionally a long bubbling note, not unlike the call of a female cuckoo, was heard. This note was only uttered by the Wilson's petrels. The plumage of the birds of this species showed two distinct varieties or "phases." The majority had pure white breasts, but many others had these parts of a smoky-grey colour: these may have been younger birds. I caught many pairs of Wilson's petrels at their nesting-places, and in every case the birds had white breasts, and although I handled a good many petrels (a hundred at least) on South Trinidad, I never found a light-breasted bird in company with a dark-breasted one. It may well be, therefore, that the dark-breasted ones are birds not fully adult. All these

PETRELS ON SOUTH TRINIDAD ISLAND. DOWNY YOUNG OF *Œstrelata trinitatis*, AND ADULTS OF *Œ. arminjoniana.*

petrels, whether white or grey-breasted, had the legs and the bases of the toes flesh-coloured, the rest of the feet and webs black.

Very few eggs of these petrels were found. Wilson's petrels had barely begun to lay, while the eggs of the other species had almost all hatched out. The eggs of the Wilson's petrels which we found were pure white, and about the size of a small hen's egg.

After collecting a number of these petrels for specimens, I climbed higher up the ravine. It was a very warm and tiring business. The water had worn the rocky bed until it had formed a deep valley. In some places in the bed of the stream there was a sheer drop of twelve or fourteen feet from one rock to another. Followed by the ship's carpenter I went laboriously on, carefully searching every nook and cranny for the nests of petrels. In some places we found deep caves, hollowed out by the stream probably during heavy rainfalls. These caves were dripping with moisture and were full of land-crabs, which scuttled away at our approach, their legs making a peculiar rattling noise on the rocky floor. They also made a continuous snapping sound with their pincers, which they waved about in a threatening manner. The land-crabs of Trinidad have been described as ferocious and of huge size; but all those we saw were small and most inoffensive, their one idea being to hurry away from us and to hide in the

nearest available hole. They were all of a pale saffron colour, and the largest we were able to catch was not more than four inches across the carapace.

The higher up the ravine we climbed, the more abundant the dead trees became. In all of them, as well as on the rocks which were scattered about on the sides of the valley, white terns were nesting in great numbers. I knocked over several with a stick, and at once noticed that they belonged to a different species to those obtained in the South Pacific during our first voyage. The bill of these Trinidad birds was wholly black, while that of the Pacific and Indian Ocean birds has a base of a hyacinth-blue colour. There are also other less noticeable differences between the white terns of South Trinidad and those of the Pacific Ocean.

On our return to England, and after a thorough examination and comparison, I had the pleasure of describing as a new species this lovely little tern of South Trinidad, and naming it after Lord Crawford (*Gygis crawfordi*).* There was only one other specimen of this bird from South Trinidad in the British Museum, and this example had been collected by Lord Crawford in 1875 during his first visit to the island. This skin had remained undescribed, owing to the fact that the bills of both forms become totally black in the dried skins, the light blue of the Pacific and Indian

* "Bulletin Brit. Orn. Club," XVI., p. 102.

Ocean birds turning black within two days after the bird has been skinned.

Gygis crawfordi lays a single egg, either on a narrow ledge of rock or else on the branch of a dead tree. No nest is made, the egg being laid in a cleft or in a small hollow, and some of those we found were placed in such a shallow depression on the bare branch of some dead tree that a slight push was sufficient to dislodge them.

The way these eggs are balanced is extraordinary, but the tenacious hold of the young bird in a similarly insecure position is perhaps more astonishing. Several times I drove a tern suddenly from its nest for the purpose of seeing if the young bird could retain its position. Although the old bird in every case left the nest in such a hurry as to upset the balance of the young one, the latter clung on and pulled itself back in a few seconds by means of its sharp claws and bill.

It was well for the birds that they could retain their hold so cleverly, for the ground underneath the trees was covered with land-crabs, which would have quickly devoured any unfortunate young bird falling from its nest.

During the whole of the time we spent amongst the colonies of these white terns we were continually mobbed by the old birds, which tried to divert our attention from the eggs and young. They were not aggressive in any way, but fluttered within a few inches of our faces, uttering all the while a soft

croak. On several occasions they settled on our hats, so fearless were they, or was it in ignorance of the nature of man ?

I stopped opposite a fallen tree, on which a pair was nesting, for the purpose of photographing them and their nest. The birds sat quite still while I put up my half-plate tripod camera, and were not at all alarmed at the flapping focussing cloth. All seemed easy, but before I could expose a plate I was surrounded by a fluttering croaking swarm of birds, and I had to keep driving them off as they hovered in front of my camera.

The number of these birds on South Trinidad is incalculable. The entire plumage is of an ivory whiteness, and they flash in the sunlight like flakes of snow. From the sea-shore to the extreme summit of the island they were sitting in swarms on every rock and dead tree, while the air seemed full of them. After leaving Trinidad, too, while steaming southward, we passed flock after flock.

The eggs are most handsome. About the size of a bantam's, and large for the bird, they are heavily blotched and streaked with yellowish olive-brown on a somewhat lighter ground colour.

We found young birds of all ages. They are covered with a grey down at first, but older birds have their white feathers suffused with a dirty yellow colour. On leaving the nest they have black quills to the wings and tail-feathers, but the

CRAWFORD'S WHITE TERN AT ITS NESTING PLACE ON SOUTH TRINIDAD ISLAND.

plumage of the adult is entirely white, with the exception of a narrow ring of black feathers encircling the eye. The bill, as I have already noted, is jet black, while the feet are pale sea-blue, the webs joining the toes being milky white. Both old and young have the middle toe furnished with a strong and sharp claw, which is specially useful to the young bird when it is in danger of falling from the nesting place.

Several pairs of gannets*, a smaller bird than our well-known solan goose, but somewhat similiarly coloured when adult, were found sitting on their nests or tending their young. The nests were in every case a collection of sticks placed in a suitable position on the fallen trees. We found no eggs, but the young were in all stages of growth. The newly-hatched bird is covered with pure white down, but it has a black bill, and a patch of bare black skin surrounding the eyes and extending down the neck under the chin. The down on the forehead stands erect, and gives the bird a most comical appearance.

Photographs were obtained of these birds without any difficulty, and most of the old gannets took no notice at all of our presence. In fact, one old bird, which was sitting by a well-grown youngster, took so little interest in our proceedings that we found it necessary to wake it up in order to take its portrait.

* *Sula piscator.*

High overhead a number of frigate birds were circling. Every now and again one would plunge downwards and chase a gannet which, slowly flapping up from the sea, was bearing a mouthful of food to its young on the hillside.

These frigate birds, of which there are two species on South Trinidad, get their food chiefly by robbing the gannets. Woe betide the gannet, as it slowly wends its way to its nest and young, if it is spied by a frigate bird. The robber at once hurls itself on its victim, and the gannet, terrified at the attack of a bird so much larger than itself, drops from its mouth and throat all the fish which it has been at such pains to catch. The frigate bird then swoops down and, catching up the fallen fish before it reaches the ground or sea, makes off and swallows the stolen food at leisure.

Frigate birds, however, do not always rely on this method of getting a meal. I have frequently seen them catching fish for themselves, and plunging into the water somewhat after the manner of a tern. I have also seen them feeding on the remains of a shark which had been killed and thrown overboard.

The commoner of the two frigate birds on South Trinidad is the greater frigate,* a bird of large size, larger than the common kite, and with a long forked tail. The adult male is a glossy greenish black, the feathers are of a lanceolate shape, and

* *Fregata aquila.*

ADULT AND YOUNG OF *Sula piscator* ON SOUTH TRINIDAD ISLAND.

under the chin is a large red bag, to which I alluded in a former chapter. The bill is long and sharp, and the upper mandible ends with a large curved hook, a most formidable weapon of offence and defence. The females and young have no bag on the throat, and have the underparts white.

The other species was the lesser frigate,* which resembles the larger except for its much smaller dimensions. We obtained one specimen, and this was shot from the deck of the yacht by Mr. Lindsay. The lesser frigate bird has only once previously been obtained in the Atlantic. This was on the occasion of the visit of the "Discovery" to South Trinidad, in September, 1901. It is, however, a common bird in the Pacific and Indian Oceans.

Apparently neither of these frigate birds was nesting on South Trinidad during our visit, but they may breed on the neighbouring islets of Martin Vas, in the immediate vicinity of which we found them numerous.

My great hope was that there might be a land-bird on South Trinidad, because all the other South Atlantic islands, with, of course, the exception of Saint Paul's Rocks, on which there are no trees or vegetation of any kind, have their peculiar forms of land-birds. During the first day we were ashore, I kept to the "Cascade," knowing that there was no time to search thoroughly amongst

* *F. ariel.*

the tree-ferns and other vegetation at the summit of the island. I wished, moreover, to make as complete a collection as possible of the sea-birds, and especially of the petrels peculiar to the islands. In this I was successful, as specimens of all the birds previously known from South Trinidad, as well as of one species—the noddy tern—new to its avifauna, were collected during that afternoon.

During the following night we steamed slowly away, and at daylight went about, returning to our former landing place. At 9 o'clock we were ashore again, and at once climbed to the plateau. Mr. Meade-Waldo and I then set off to climb to the summit. We each took a sailor with us to carry our lunch, cameras, and so on, but soon after we had begun the ascent of the "Cascade," one of the sailors gave out, and we had to leave him to return to the ship. After this we had to carry our own cameras, and soon found that these, together with collecting gun, butterfly net, and other things, considerably retarded our progress.

After leaving the plateau we decided that our best way to reach the tree-ferns was to follow the "Cascade" as much as possible, and then climb round a huge crown-shaped rock, which towered above us. Passing up the rocky bed of the "Cascade," which I had explored the previous day, we found that beyond it the bed of the stream was somewhat more open. Masses of ferns were growing close to the water, and in these my com-

THE "CROWN" ROCK, SOUTH TRINIDAD ISLAND.

panion caught a number of moths. The sides of the valley were here very steep and covered with grass, but we soon discovered that the ground was remarkably brittle.

We kept to the bed of the stream until the "Crown" rock was reached. The stream here was full of fallen trees, every one of them tenanted by a pair or more of white terns. The trees were lying at all angles, several of them completely blocked our passage, while the sides of the valley were literally covered with dead branches, which lay partly or wholly overgrown by the ferns and grass, so that our progress was extremely slow and tedious. Every now and again a moth fluttered out from under our feet, and many were captured.

A little further on the bed of the stream was dry and full of boulders of all sizes, round which we had to make a wide *détour*. At last we reached the "Crown" rock, where a halt was made for luncheon.

After a too short half-hour's rest we started our climb again, and soon found that we still had the most difficult part of our journey in front, for after we had skirted the "Crown" rock we came to a narrow ridge of crumbling ground, covered with grass but giving no safe foothold. On each side of us the ground sloped down precipitously for several hundred feet, and a slip would have been disastrous. For some distance

we proceeded in slow fashion, planting our feet firmly in the crumbling earth, not daring to hold on by the long grass, which would have torn away at once, till at length a broader stretch of land opened in front of us. The ground was still very brittle, but it offered a good foothold. In front of us, at a distance of a few hundred feet, we could see the top of the island covered with low bushes resembling *lauristinus*, amongst which was a clump of trees bearing shining leaves. In these trees numbers of gannets were sitting on their nests, and they seemed to be considerably astonished at seeing us approaching their home. We quickly scrambled to the trees, and a few minutes later the summit of South Trinidad was gained.

I shall never forget the magnificent view which now lay revealed. Behind us was the "Cascade," on each side deep valleys filled with tree-ferns, while to our front the whole of the windward side of the island was exposed to view. Immediately below a precipice fell sheer down for several hundreds of feet, and then the land gradually sloped away to the green undulating country which borders the windward side of South Trinidad. In the distance, and close to the water's edge, the remains of a Portuguese convict settlement was to be seen. There appeared to be little of it standing, but the foundations of the houses, deserted for many years past, could be

SOUTH TRINIDAD ISLAND, FROM THE HIGHEST PEAK.

clearly distinguished. To our immediate right was a peak of about the same height as that upon which we were standing. The ground had slipped away from it to such an extent that all vegetation had been destroyed, and only the deep red-coloured earth was to be seen. Further to the right towered the "Sugarloaf," boldly outlined against the deep blue sea. It was full of crannies and ledges, in which petrels were nesting in vast numbers. As soon as we appeared above the skyline, these birds left their nests and flew backwards and forwards in immense and continually increasing numbers, until the air was full of a screaming multitude of birds. Below, above and on all sides of us these birds wheeled and shrieked, until the clamour became almost deafening.

Beyond the "Sugarloaf" we could see "Noah's Ark," a mass of rock rising straight up from the sea, and shaped like the familiar toy so dear to children. This rock was likewise covered with petrels, and they also joined the tumult. At the foot of "Noah's Ark" the pirate's treasure is supposed to be buried. Whether there is really any treasure is doubtful, but if there is, it is probable that it will never be found, as, owing to the brittle character of the soil, the land is continually slipping, so that by this time the treasure must be buried deep, beyond all hope of recovery.

Far away, and almost on the horizon, the rocky

islets of Martin Vas, on which no one is yet known to have landed, were discernible.

It was next to impossible to make our way down to the windward side of the island; moreover, it was getting late in the afternoon, so we decided that the best thing to do was to descend to the "Pier" by the same way we had come. But instead of taking the "Cascade" valley, we began to descend by another deep valley close to it. The surface of the ground here was even more brittle than in the "Cascade" valley, and the descent was very steep. My companion and a sailor started first and safely reached the first of the tree-ferns. Seeing that they were safely down I started, but the ground was now considerably broken up by their feet, and I found that it was extremely difficult to get a foothold in the powdery red-coloured earth, which slipped away from under me like sand. Suddenly, and without any warning, the whole of the ground gave way, and, enveloped in a cloud of choking dust, I felt myself rushing down the incline, and, before I could realise what had happened, I was standing, or rather sitting, close to my companions. My first thought was for the camera and slides which, together with my gun, had been slung on my back. Most fortunately these were uninjured, and, as I afterwards found, none of the plates had suffered in any way, although the camera-case was full of dust.

After this the way became a little easier. The bed of the valley was dry, but it had evidently been hollowed out by water, for the rocks showed considerable wear from trickling water. Possibly it is only in the rainy season that there is any water in this valley, for at the time of our visit the rocks were covered with a thick tangle of grass. Amongst the grass and climbing over some of the fallen trees, a few of which were to be seen in this valley, was a species of climbing bean. This bean was in flower, and is doubtless the same as that mentioned by Mr. Knight as growing thickly on the windward side of the island.

Mention may here be made of some mice which we saw in considerable numbers, both in this and in the "Cascade" valley—to what species they belonged we were unable to determine. They were small and of a greyish colour. We both thought that they looked like a small vole, but they were extremely quick in their movements, and the grass was so thick and high that we were unable to shoot any specimens.

The sides of this valley were thickly grown with tree-ferns, and to these we now turned our attention. The ferns were from twelve to twenty-five feet in height. Their stems were quite bare, but at the top a number of fern-like fronds grew at right-angles to the stem. The tree-ferns on South Trinidad grow very close together, and owing to this fact and to the ground being strewn

with boulders of all sizes, over which the grass had sprung up in great luxuriance, walking through a forest of these ferns was a tedious business.

Every now and again I was thrown into a state of excitement on hearing a shrill twittering sound just above my head. Visions of a land-bird were always in my mind, but time after time I was disappointed to find that the twitterings were caused by white terns which were nesting on the tops of the decaying trunks of dead tree-ferns. Finally we came to the reluctant conclusion that there is no land-bird of any kind on South Trinidad. We had carefully searched the tallest trees on the summit, and there, as in the tree-ferns, we found no signs of such a bird.

On the trunk of one of the tree-ferns, Mr. Meade-Waldo found an orchid, which he sent home to England, but apart from this and the bean there was no other plant in this valley which we had not found in that of the "Cascade."

Instead of taking us down to the shore, as we had fully expected, we found that the valley was a mere cul-de-sac, and ended with a steep precipice of several hundreds of feet in height.

It was by this time nearly four o'clock in the afternoon, and we had arranged to be at the landing place at five, and here we were nearly two thousand feet above the sea, and the yacht looking a mere speck far below us. It was

THE TREE-FERN FOREST, SOUTH TRINIDAD.

(*Photographed by E. G. B. Meade-Waldo.*) [57]

necessary, therefore, to get out of the valley in which we were trapped as quickly as possible. To climb the slide we came down was an impossibility, my fall earlier in the afternoon having completely shut that way off from us. To descend from where we were was also an impossibility, owing to the precipice. The only way open to us was to force our way through the tree-ferns and gain the ridge and climb up that to the gannets' nests.

We all three felt that we had had enough climbing. Water there was none; all our drink had been consumed earlier in the afternoon. However, we had to get out somehow, and the sooner the better; so we started off, and at length reached the ridge up which we slowly made our way. Arrived at the top we started for the "Cascade" valley, and followed the same track as that we had ascended some hours previously.

Going down this track was much more unpleasant than coming up. On our right was a precipice, while the outlook on our left was scarcely less formidable, for in that direction the ground fell away almost sheer for at least three hundred feet. Our path was a narrow ridge, just wide enough to give a foothold, and that a most insecure one. At length, however, we reached the "Crown" rock, and skirting it again we came in sight of the beginning of the "Cascade," the clear water of which was so tempting that the seaman and I resolved to climb down to it. Never

was water more refreshing, and not even the presence of vast numbers of land-crabs was sufficient to deter us from a long and much-needed drink. Then, feeling greatly refreshed, we followed the course of the "Cascade," and little by little made our way down towards the shore.

In many places the "Cascade" formed waterfalls as much as ten or twelve feet in height, and these falls were not easy to negotiate. "Jack," however, produced a piece of rope, and so we were able to lower ourselves down from rock to rock, and finally reached the shore without mishap.

The sailor who accompanied us on this, and afterwards on many excursions of this kind, was the coxswain of the steam launch, and volunteered to carry our extra baggage, such as cameras and so on. Throughout this voyage he gave his services in this way, and to his untiring perseverance and willingness we are greatly indebted.

We reached the "Pier" about six o'clock in the evening, and for my part I was most thankful to get into the boat and rest. Notwithstanding the hard work, however, I had never spent a more delightful or interesting time.

During the three voyages that it has been my good fortune to make in the "Valhalla" with Lord Crawford, many interesting and beautiful islands were visited, but to my mind none of these places possesses the charm of this small uninhabited spot in the South Atlantic.

CHAPTER V.

MARTIN VAS.

THE ship was hove to off South Trinidad during the following night, and early next morning we steamed slowly towards the rocky islets of Martin Vas.

Owing to the insufficient manner in which the sea surrounding this group of islands has been charted, it was necessary to proceed very cautiously. Suddenly the water became very shallow, and, although we were then about two miles away from the nearest islet, it was necessary to go full speed astern. While we were backing in this way a large rock, covered by some six feet of water, was seen within a few yards of the ship. This rock is not marked on the chart, and we thus had a very narrow escape from an enforced residence on South Trinidad.

At length a passage was found for the ship, and we drew in to within about half a mile of the main islet. We then set out in boats and rowed towards the shore.

Martin Vas consists of four rocks, the two

largest being connected together by a narrow strip of land which is only noticeable at low water.

It does not seem to have been previously mentioned that when approached from the south-east, three of these islets bear a striking resemblance to the outline of South Trinidad, though on a much smaller scale. The largest of them is about 300 feet in height, and its sides are precipitous; but the summit appears to form a plateau. If the ground of this island is as brittle as that of South Trinidad, I should imagine that it would be nearly impossible to climb to the plateau. No one, however, has, so far as I can ascertain, landed on Martin Vas.

It has been said that the heavy surf makes it impossible to land. At the time of our visit, however, the weather was exceptionally fine and the sea quite smooth, and had we been able to spare the time, we could without any doubt have got ashore on the largest of the islets.

As we approached numbers of the greater frigate bird appeared and circled overhead. Many sooty terns* also came off from the main islet, and these in company with the common noddy seemed to be the commonest birds inhabiting the group. A few Wilson's and Trinidad petrels were observed, but all these were flying over the sea, either in the direction of, or away from,

* *Sterna fuliginosa.*

THE ISLETS OF MARTIN VAS.

Trinidad. None of them seemed to be nesting on Martin Vas.

An example of the smaller noddy tern* was seen amongst the common noddy and sooty terns, and a large white-breasted shearwater† passed my boat. Several pairs of gannets, of the same species as that found on South Trinidad, were also seen, but they did not appear to have nests on Martin Vas.

The sooty tern does not seem to have been recorded from Martin Vas or South Trinidad before, though it probably is quite common there. To authenticate our identification a specimen was obtained, and this was the only bird we shot during the morning.

I do not think that the islets of Martin Vas are inhabited by any birds of great interest, and probably South Trinidad offers more suitable nesting places.

The sea round these islets is inhabited by numerous sharks, almost as many being seen here as at Saint Paul's Rocks. Many were caught from the ship while we were away in the boats, but they were not of any great size, their average length being about six feet.

Shortly after mid-day we returned to the yacht, which at once got under steam and left for Tristan da Cunha.

During the two days spent on South Trinidad

* *Micranous leucocapillus.* † *Puffinus gravis ?*

and Martin Vas a large collection of birds was made. They were kept in the refrigerator until I could finish skinning them, a task which occupied several days.

The series of skins of the petrels is very interesting, and seems to show that Wilson's petrel, which was described as a new species from examples brought home by the "Discovery," is in reality the same as *Œstrelata arminjoniana*, described many years ago by Professor Giglioli. Owing, however, to the specimens brought home by the naturalists of the "Discovery" being in freshly moulted plumage, they appeared to belong to a different and undescribed species.

CHAPTER VI.

TRISTAN DA CUNHA.

Owing to the very fine weather and light winds the passage from Trinidad and Martin Vas to Tristan da Cunha occupied twelve days.

Tristan da Cunha is the largest of a group of three islands, all of which are within sight of one another; but Nightingale Island and Inaccessible Island, the other two of the group, are insignificant in size and appearance compared with Tristan da Cunha, the peak of which rises over 8,000 feet above the sea.

Gough Island, which is situated about two hundred miles to the south and slightly east of Tristan da Cunha, should probably be included in this group, owing to its somewhat similar avifauna.

A large number of sea-birds, including several species of albatroses, as well as petrels, breed on Tristan da Cunha and the two smaller islands in the immediate neighbourhood.

Long before the islands were sighted sea-birds became very numerous. Two species of petrels

which we saw at no great distance from Tristan da Cunha deserve special mention, because up to the present time no one has succeeded in discovering where they breed.

One of these is the great shearwater,* a well-known visitor to British seas, and I think the only "British" bird whose eggs are now unknown. These birds were seen in some abundance in the neighbourhood of these islands, and in nearly every case there were two individuals, doubtless male and female, together. A few weeks later I examined a skin of the great shearwater in the Cape Town Museum, which had *been caught* on Inaccessible Island, and there would seem to be little doubt that this bird breeds on one of these three islands.

The other petrel which was encountered, not only before we reached Tristan da Cunha but also between that island and the Cape of Good Hope, was *Œstrelata incerta*, of which very few specimens have ever been obtained. It is about the size of a large pigeon, and of a dull brown on the back with yellowish-brown, almost golden, neck, and white underparts. The three skins in the British Museum were all obtained in the South Atlantic near the Cape of Good Hope, and possibly this bird also nests on one of these three islands.

As the yacht gradually drew nearer to the islands the number of albatroses increased. The

* *Puffinus gravis.*

TRISTAN DA CUNHA.

yellow-nosed albatros* was by far the commonest of the three species seen here. This bird somewhat resembles a very large black-backed gull, the head, however, is washed with smoky-grey, and a bright yellowish-orange streak extends along the whole length of the bill. The great albatros† was in smaller numbers, and most of them left the vicinity of the ship when within a few miles of the island. Every now and then a sooty albatros,‡ easily recognisable by its sooty-brown colour, was observed.

The people on shore soon sighted the ship, and, when we were within a mile of the settlement, two boats put out, and a few minutes later the islanders scrambled aboard.

Lord Crawford had brought a mail from England, and some time was spent in sorting the various letters and packages. By the time this was finished it was too late to go on shore that day, and all we could do was to spend an hour in a boat between the ship and the island.

I had a talk with several of the islanders about the birds, and especially the three species of land-birds, which have been described from Tristan da Cunha. I succeeded in getting a certain amount of information, but how much of it was correct I cannot say.

I was told that there is now only one land-bird. This is a thrush called *Nesochicla eremita*, which

* *Diomedea chlororhyncha.* † *D. exulans.* ‡ *D. fuliginosa.*

in colour and size much resembles a young blackbird in nestling plumage. The Tristan finch,* about the size of a sparrow and of a greenish colour, appears to be extinct on Tristan da Cunha, though we were told that it is still common on Inaccessible Island. Tristan da Cunha is overrun with rats, and they are probably responsible for the extinction of the finch.

I also made enquiries as to whether the flightless moorhen† still existed on the main island, but none of the islanders had any knowledge of the bird. They, however, told me that a bird like a "little black chicken" with long legs is quite common on Inaccessible. There is little doubt that this rail, of which I believe no specimens have yet been obtained, is a different species to that which was formerly found on Tristan da Cunha. Moseley states‡ that the rail of Inaccessible Island was described to him by two men who had been living on that island as "much smaller" than *Porphyriornis nesiotis*, and differing from it in "having finer legs and a longer beak."

The name "Inaccessible," it should be mentioned, was given to the island on account of the inaccessibility of its peak. The island itself, being fringed with a thick growth of kelp weed, is not difficult to land upon, as the weed prevents the surf from breaking on the shore.

* *Nesospiza acunhae.* † *Porphyriornis nesiotis.*

‡ "Notes by a Naturalist," 1892, p. 105.

We rowed to within half a mile of the shore of Tristan da Cunha, near the settlement. The sea was perfectly smooth, and had it been earlier in the afternoon we should have landed. The settlement is composed of about sixteen stone houses, and is situated at the foot of the peaks where the grass-covered ground slopes gradually down to the sea. Great numbers of cattle were feeding on this grass land. The islanders sell them to passing ships, and we ordered two bullocks, but owing to the stormy weather which set in that night we were unable to hold any further communication with the shore.

During the evening I made a small collection of sea-birds. Two fine examples of the yellow-nosed albatros were shot, also some terns.* The latter, which are much like our common tern, were very numerous, and, judging by the number of young birds which were only just able to fly, there must be a considerable nesting colony.

The most interesting birds which we saw, however, were some diving petrels, which proved to belong to a hitherto undescribed species.† Superficially these petrels resemble the diving petrel of the Straits of Magellan, but they are somewhat smaller and have a much greater power of flight. On several occasions I saw them rise off the water and fly away out of sight, whereas

* *Sterna vittata.*

† *Pelecanoides dacunhae* Nicoll, "Bull. B.O.C.," XVI., p. 103.

those found in the Magellan Straits drop into the water after a flight of about fifty to one hundred yards. The Tristan da Cunha diving petrels are constantly exposed to rough weather and breaking waves, and in consequence have to take wing continually to avoid being drowned, and this fact may account for their greater powers of flight.

They were met with soon after we left the yacht, and became more numerous as we approached the land. Half a mile from the shore they were on all sides of us, and appeared continually close to the boat, when instead of diving they at once took to flight, and passed away at a great speed.

The peak was covered by a mass of dense clouds, through which there appeared every now and then a yellow-nosed albatros sailing down from its nesting place to the sea. We were informed that a great many of these birds as well as sooty albatroses breed inside the crater at the top of the peak, and that the great albatros does not nest on the main island, but only on Inaccessible.

We made arrangements with one of the natives to visit the peak the next day, and had great hopes of making some interesting additions to our collection of petrels. Alas, early next morning the sea had risen to such an extent that landing was quite out of the question. We lay to off the island for three days, but the gale increased in fury instead of abating, and as our stock of coal was

getting very low, we were forced to leave and shape our course for Cape Town.

The steward bought from the natives of Tristan da Cunha a quantity of small red berries which, when stewed, were much like cranberries in flavour. This fruit, which we were told formed the principal food of the thrush-like bird, is probably the *Nertera depressa* mentioned by Moseley (*ibid.*, p. 99).

While the ship was hove to a great many birds were seen, Antarctic skuas and sooty albatroses being the most conspicuous. They were too knowing or else too well fed to be caught on a hook, although much time was spent in fishing for them. We also saw two very large porpoises, which were nearly pure white; they played about for several hours round the bows of the ship.

During the three days of waiting the weather was so thick that, although we were repeatedly within a mile of Tristan da Cunha, we only twice saw the peak, which suddenly appeared from amongst the clouds and remained visible for several minutes, the rest of the island being completely buried in clouds and mist.

CHAPTER VII.

DASSEN ISLAND.

SEVEN DAYS after leaving Tristan da Cunha we sighted Table Mountain, and a few hours later the anchor was dropped in Table Bay.

During the week at sea between the Tristan Islands and the Cape we had a strong west wind which was most favourable for sailing, and one day's run under these conditions was 275 miles.

During our second day at sea, when nearly 400 miles from Tristan da Cunha, an Antarctic skua and many terns* were met with. These birds must wander many hundreds of miles from land, and, as they were not likely to have been migrating, it is probable that they follow shoals of small fish, and thus in time get into mid-ocean and far from land. Great numbers of petrels and albatroses were also seen, and, indeed, birds were more numerous in this part of the South Atlantic than elsewhere in the oceans that we visited. Petrels of several species were frequent, either singly or in large flocks, while yellow-nosed

* *Sterna vittata.*

albatroses followed us until we were within sight of Table Mountain, when they disappeared, and their place was taken by the "Cape hen."*

Table Mountain was quite clear and free of clouds, and the sea was a flat calm as we turned into Table Bay. When we anchored in the Bay, at some distance from Cape Town, we found that cormorants were swarming in incredible numbers right up to the shipping.

During our stay at Cape Town the "Valhalla" was dry-docked for scraping and painting, and this necessitated our leaving the ship and taking rooms in an hotel. Eleven days were spent here, and we made several most interesting excursions in company with Mr. W. L. Sclater, who was at that time the director of the Cape Town Museum. Under his guidance we climbed Table Mountain, but by far the most interesting experience was a trip to Dassen Island.

This island is situated about 35 miles from Cape Town and is of great importance, not only on account of its fine lighthouse, but also owing to its being a Government "bird-preserve."

Cormorants' guano and penguins' eggs are collected on the island in great quantities and shipped to Cape Town.

Having obtained special permission to visit the island we left Cape Town on February 3rd in the Government tug "Magnet," which was carrying the

* *Majaqueus æquinoctialis.*

mails there. Soon after leaving Cape Town we passed close to Robben Island, which is set apart as a leper station. Many penguins were seen during the passage, and numbers of Cape hens followed the launch. Occasionally sooty and black-browed albatroses flew by, but no specimens were obtained as we had no guns with us, on account of the strict regulations enforced on Dassen Island, where the firing of guns is prohibited for fear of disturbing the nesting birds.

As we drew close to the island, after a few hours' passage, we came in view of enormous numbers of penguins sitting in rows upon the shore, while the sea in the immediate neighbourhood was crowded with them. I had never before seen so many birds together, but even this was nothing to what we were to witness the next day. As soon as we landed we were met by one of the lighthouse-keepers, as well as by one of the men whose duty it is to see that the birds are undisturbed.

Dassen Island is in no place more than a few feet above the level of the sea; it is entirely uncultivated, and almost completely covered with a low growing ice-plant. On the windward side the shore is rocky, but in no place steep, while on the leeward side it is sandy. The rest of the island is covered with a deep layer of sand in which the penguins dig holes for their nests at the roots of the ice-plants.

from the iron tower. Mr. Bennett, the light-keeper, was most kind and obliging, and at once told us that he would be delighted to put us up for the night in his house. Moreover, he showed us over the lighthouse, which is one of the most important at the Cape. It is about 160 feet in height, and is built entirely of iron. The light is revolving and white, and about 4½ gallons of oil are burnt every night. Mr. Bennett told me that very few birds ever strike the glass of the lighthouse, and this is not surprising, as Dassen Island is too far south for migrating passerine birds.

Outside the windows of my room was a small colony of about twenty penguins which, throughout the night, kept up a continual "braying." The name, "Jackass Penguin," has been given most appropriately to this bird, for their cry is a perfect imitation of the bray of an ass. The birds near the house were answered by the rest of the penguins on the island, and a most extraordinary noise was the result, a constant "braying" resounding from all parts of the island.

Early next morning we met outside the lighthouse and examined some of the penguins' nesting holes, many of which contained eggs and sitting birds. No nest is made, but the two eggs, which are white, with a shell of coarse texture, are deposited in a hollow scooped out at the foot of the ice-plants, or in a natural depression in the ground. The female sits very close, and when

JACKASS PENGUINS, DASSEN ISLAND.

disturbed crouches down and rolls her head from side to side, occasionally making a short rush at the intruder, and all the while she utters a grunting noise. As a rule the male stands close to the nest; occasionally, however, he leaves his mate and walks down to the sea in search of food for her and himself.

Dassen Island must offer a most wonderful sight when all the birds are ashore, as even at the time of our visit there were at least one pair of birds to every square yard.

Mr. Almada, the "watcher," informed us that most of the birds on shore at this time were moulting. They come up from the sea coated with fat and remain on shore for the period of the moult, which takes about a month, and during this time they never enter the sea for food, but appear to live on their accumulated fat. When the moult is complete, the penguins go to sea again for another month and again become enormously fat. They then land again and commence to breed, and as soon as the young are completely feathered, all of them leave the island and spend some time at sea before the next breeding season commences. All the year round there are a few pairs nesting on the island. These may possibly be early bred young of the previous year, or old birds which for some reason have had their moult retarded.

The eggs are collected and sent to Cape Town for sale, where they fetch about ten shillings per

hundred. Penguins do not make guano to the same extent as do the cormorants, and their nesting places are "scraped" once only every year.

After breakfast we set out for the sandy shore, where most of the penguins were gathered together. It was a truly remarkable sight. As far as the eye could see was an unending mass of penguins. Thousands upon thousands of the comical-looking birds were sitting close together along the sandy shore, while many more were arriving from the sea and walking solemnly up to join their companions. All were either in full moult or just beginning to cast their feathers. The moult of these birds is somewhat peculiar. The feathers of the back come off in large patches beginning from the tail, and the birds are then bare except for a coating of soft down amongst which the new feathers make their appearance. The sand was thickly covered with feathers, while amongst the rocks and ice-plants were "drifts" of them several inches in depth.

We photographed the penguins as they sat on the shore, and they showed little fear of us. We walked amongst them without causing them much alarm, and they would not go into the sea unless they were very hard pressed, and then they remained but a very short time in the water.

There were a few young ones on the island, and one which I took alive with the intention of making

JACKASS PENGUINS ON DASSEN ISLAND.

a "skin" of it, became so tame and friendly that I had not the heart to kill it. It subsequently became a great pet and was brought safely home. Young penguins are at first covered with a dark greenish-brown down, and the feathers when they begin to grow make their appearance first just above the tail, the head and neck being the last to be feathered.

After spending some time with the penguins we walked over to another part of the island where the cormorants were nesting. Three, if not four, species of cormorants nest on Dassen Island, but of these the commonest is the Cape cormorant,* which was breeding in vast numbers. A few pairs of the darker coloured *P. neglectus* were nesting, but they appeared to be rare. The Cape cormorant is the principal guano-producing bird on the island. In appearance this bird somewhat resembles our shag, but is smaller. They had young at the time of our visit, and all of these were ready to fly. The stench in this part of the island was almost unbearable at first, but after a time we became accustomed to it, and did not notice it.

Several photographs were taken of the cormorants, but they were not so tame as the penguins, and if one approached to within a few yards of the colony, all the old birds and most of the young took to flight with an outburst of screaming.

Hovering over the colony were numbers of

* *Phalacrocorax capensis.*

black-backed gulls,* a bird much like our lesser black-backed gull in shape and coloration. These birds, we were told, are most destructive to the cormorants, as they devour the eggs and newly-hatched young as soon as the old birds leave the nests uncovered.

Here also were a great number of sacred ibises,† which had built their nests in colonies amongst those of the cormorants. So close together were the nests of these ibises that they appeared to be one mass of rubbish with numerous depressions, in each of which were eggs or young, but mostly young. The ibises rose in a cloud and flew away at our approach. A great number of young ones, however, were unable to fly, and two were caught alive and taken back to the ship, where they were safely reared, and they are now in the London Zoological Gardens. When newly-hatched these ibises are covered with grey and black down. The head and neck of the adult are covered with jet black skin bare of feathers, but this baldness is not attained until the bird is two years old. Prior to that the head and neck are clothed with black feathers; those of the throat and foreneck are, however, moulted after a few weeks, and are replaced by new white feathers, which are the last to be shed before the bird arrives at its fully adult plumage.

We were somewhat surprised to see the sacred

* *Larus dominicanus.* † *Ibis aethiopica.*

CAPE CORMORANTS, WITH SACRED IBISES IN THE BACKGROUND, AT DASSEN ISLAND.

ibis here, as there is no regular supply of fresh water on the island, but we were told that they usually came to the water troughs which are put round the lighthouse for the fowls belonging to the keeper. The principal food of this bird on Dassen Island appears to be the intestines of the young cormorants, and all the young ibises which we caught ejected a mass of entrails. Owing to their predilection for this food, these beautiful birds are considered as vermin, and are slaughtered on every possible occasion by the inhabitants. A great many of the young escape, however, owing to the nests being placed close to those of the cormorants, near which no one is allowed to go.

Besides the birds already mentioned there was seen close to the lighthouse a pair of ringed plovers,* from whose actions it became evident that there were young in the vicinity, and after a careful search we found one in downy plumage. These birds are not unlike the Kentish plover in size and general appearance, but they are somewhat darker and have no black collar; moreover, the breast of the adult is of a buff colour. Several pairs of them were seen on the island. This species is found over the whole of Africa, from the Cape to Egypt.

A pair of black oyster-catchers† were evidently about to breed. There was also a large flock of

* *Ægialitis pecuaria.* † *Haematopus moquini.*

sanderlings in full winter plumage on the shore, and in their company were several turnstones, —both very common visitors to England in spring and autumn. Occasionally a few small parties of ruffs and reeves,* another well-known British bird, were met with. Flying about round the lighthouse were several swallows of our familiar species† and a pair of wagtails of one of the Cape species,‡ which is not unlike our pied wagtail, were about to nest on the light-keeper's house.

Giant petrels were swimming in the sea close to the shore on the windward side, and they probably fed on the young cormorants and penguins, especially those that were weak and sickly.

As we had to get on board the tug at mid-day, our time ashore was limited, but we managed to cover a good deal of ground and saw most of the principal nesting places.

On our way back to Cape Town we saw little of interest, with the exception of a noddy tern,§ which has not previously been recorded from the Cape of Good Hope.

The day before we sailed away from Cape Town a ribbon fish (*Regalecus*) of about seven feet in length was caught by some fishermen in Table Bay. It was brought on board, and Lord Crawford purchased it for the British Museum. It was

* *Machetes pugnax.* † *Hirundo rustica.*
‡ *Motacilla capensis.* § *Anous stolidus.*

JACKASS PENGUINS ON DASSEN ISLAND.

somewhat damaged about the head, and the brilliant scarlet dorsal fin was unfortunately rather broken. We put it in the freezing room and so brought it to England.

CHAPTER VIII.

MOZAMBIQUE CHANNEL AND COMORO ISLANDS.

We sailed from Cape Town on February 8th, 1906, and proceeded to Durban, where a day was spent in coaling.

After leaving Durban Lord Crawford intended to land on Europa Island, which has only once been visited by a naturalist; but this idea had to be abandoned, owing to the extremely bad weather encountered throughout the Mozambique Channel.

Two days after we left Durban, a gale got up, and in two more days this developed into a cyclone, which blew with unabated fury for twenty-four hours. It started about nine o'clock at night; rain fell in torrents, and for several hours we all stood on deck holding on to the rigging of the mizzen-mast. The sea was terrible, and enormous waves towered above the ship. The "Valhalla" was hove to, and rode out the gale in splendid fashion.

Distinguished above the roaring of the wind and the tumult of the breaking waves we could hear the

wild cries of whimbrels and great numbers of other wading birds, and terns could be seen flying round the ship. At early dawn a tern was blown against the rigging so fiercely that one of its wings was completely ripped away.

In the morning the sea was still as high as during the previous night, and as far as the eye could see enormous quantities of birds—terns, whimbrels, little stints, curlew-sandpipers—were flying round the ship in flocks, though none came aboard. Later in the day common swallows* appeared, as also did a large harrier. The swallows came on board at dusk and crowded together on the top of the deck house. A nightjar† was also caught on deck. Throughout the day we remained hove to, and it was impossible to ascertain our position owing to the thick mist which hung over the sea. We knew that somewhere on our starboard side there was a small coral island, Bassas da India, while to port was the coast of Africa. Suddenly, however, about two o'clock in the afternoon, the wind dropped, and, the fog lifting for a few minutes, we obtained a glimpse of the Mozambique coast. After this we got under steam again, and continued on our course for the Comoro Islands.

Two hours later an open boat was sighted, and we steamed for it. It proved to be a fishing boat full of natives, who had been blown out from

* *Hirundo rustica.* † *Caprimulgus unwini.*

the Mozambique coast the night before. Their sail was torn to pieces, and they had no food or water. Our lifeboat was lowered at once in charge of the second mate, and we provided the natives with biscuits, water, a sail, and some rope.

I believe that boats often get blown away from the coast in the Mozambique Channel in this way. Later on, when we were in the Seychelle Islands, we heard several extraordinary tales of boats being blown away during a hurricane, and being carried for great distances.

At daybreak on February 23rd, Mayotte, one of the Comoro Islands, was sighted, and a short time afterwards we entered the harbour, which is studded with little islands thickly covered with vegetation.

As soon as we anchored off the town black kites* appeared. These birds seem to be very common winter visitors to the Comoro Islands, as well as to Madagascar and many islands to the west of it. Round about the ship, during the whole of the time we spent at Mayotte, were many sharks, though most of them were small ones. Several of these sharks were caught with a tarpon rod and line, and gave excellent sport.

Nearly the whole of the original vegetation has been cleared on Mayotte, and on one peak only is it now possible to see the virgin forests with

* *Milvus migrans.*

VIRGIN FOREST, MAYOTTE ISLAND.
(Photographed by E. G. B. Meade-Waldo.)

which the island was formerly covered. The island was cleared for the cultivation of sugar cane, but this industry being at a very low ebb the greater part is now uncultivated, and is becoming covered with a thick growth of acacia trees. At one place we landed at a wharf which formerly belonged to a large sugar factory, which was still standing with the machinery for crushing the cane, although it had been abandoned for several years.

The shore on the leeward side is bordered with mangrove swamps, which are covered by the sea at high tide. The mud in these swamps makes a fine feeding ground for wading birds. The most remarkable of these was the crab-plover,* a bird which much resembles an avocet in size and coloration. Its bill, however, is short and stout, and very different from the avocet's slender upturned bill. These crab-plovers were feeding in considerable numbers on the shore in company with curlews and whimbrels, and other well-known British wading birds, such as the common sandpiper† and greenshank.‡

Among the mangrove trees were numbers of little kingfishers,§ somewhat smaller than the common kingfisher and with a remarkable mop-like crest, composed of long soft feathers which hang down over the eyes and back of the head.

The country close to the town is cultivated,

* *Dromas ardeola.* † *Totanus hypoleucus.*

‡ *Totanus canescens.* § *Corythornis cristata.*

sugar cane and maize being the principal crops, while a few limes are also grown. Our first excursion was to the cultivated country close to the harbour, where several interesting birds and butterflies were obtained. Among the former should be mentioned the white-eye,* a little bird of about the size of a willow-wren, but of a deep lemon-yellow colour on the breast, and with pale chestnut flanks. The eye is encircled by a ring of white silky feathers. This species is peculiar to Mayotte, and is one of the commonest birds there. They were in large flocks, especially at the edge of the mangrove swamps.

Paradise flycatchers were also seen in plenty, and one of these birds which we shot proved to belong to a new species.† A beautiful little sun-bird was also very common near the shore, and two species of red weaver birds were obtained. One of these, *Nesocanthis eminentissima*, which is peculiar to the Comoro Islands, is slightly larger than our sparrow, and the male has a bright crimson breast during the breeding season, but when not in breeding plumage it is dull olive-brown, like the females and young. The other weaver bird, called *Foudia madagascariensis*, is of a brilliant scarlet, the back being spotted with black. It is probable that this species, in common with other birds, has been introduced from Madagascar.

* *Zosterops mayottensis.* † *Terpsiphone lindsayi.*

The grey-headed love-bird* is not uncommon on the cultivated land near the seashore. This small green parroquet, the males of which have a grey head and neck, is an inhabitant of Madagascar, and possibly owes its presence in the Comoros to human agency. It is a common cage bird, and great numbers are imported from Madagascar to Europe.

On one occasion we visited a small island situated in the middle of the harbour. This island, which is marked on the charts as "Buzi," was thickly covered with vegetation, and in some places it was impossible to force a way through the prickly clumps of acacia trees. The heat was intense, and I have never felt the sun so much as I did on Buzi.

A number of swifts were flying over the island, and after I had waited for some time they flew near enough to be secured. These birds, which somewhat resembled our common swift, proved to belong to an undescribed species which I have named *Cypselus mayottensis*.†

This little island was tenanted by a large colony of fruit bats.‡ They were, however, in the thick trees on the inaccessible side of the island, where it rises straight up from the sea. Every evening numbers of them flew across to the main island,

* *Agapornis cana.*

† "Bulletin Brit. Orn. Club," Vol. XVI., p. 104, June, 1906.

‡ *Pteropus comorensis.*

and one evening, on our way back to the ship after a day's collecting in the mangrove swamps, we shot one as it flew over the steam launch. Its fur was of a reddish colour, thick and soft. A most unpleasant skunk-like smell clings to one's hands after touching one of these bats, and this is especially noticeable when the animal has just been shot. On several occasions I saw these fruit bats splash into the salt-water of the harbour, but whether they were drinking or washing I do not know.

During our visit to the Comoros we steamed across to Anjouan Island, but owing to the heavy sea and strong wind we were unable to get in close, and had to return to Mayotte. This was much to be regretted, as the fauna of Anjouan is somewhat different to that of Mayotte.

Our last day was spent in the virgin forest, on one of the highest peaks of Mayotte. My special object on this excursion was to get examples of the peculiar fruit-pigeon,* which is only to be found on the wooded peaks. We saw, altogether, four examples of this remarkable bird, and I shot two adults. In appearance it is short and thickset, the entire plumage is deep blue, with the exception of the head, neck, and upper breast, which are grey tinged with yellow. The feathers of the fore neck and upper breast are elongated and lanceolate in form, while round the eye is a

* *Alectroenas sganzini.*

FORET D'AMBRE, MADAGASCAR.

bare patch of red skin. The " coo " of the Comoro fruit-pigeon is extraordinarily deep and resonant. These pigeons were very tame, and took no notice whatever of our presence. There is no doubt that they are now extremely rare.

A native guide told me that he had often seen the black parrot* in this same forest-covered peak, but unfortunately we did not come across it.

The Madagascar weaver bird was somewhat abundant on the outskirts of the forest, and the only other bird seen there was a thrush† of about the size of our blackbird; it has an orange-coloured bill, but the plumage is greyish and the crown of the head black. It is a very noisy bird, its loud chattering call-note at once betrays its presence.

This patch of virgin forest extends from about 1000 feet above sea-level nearly to the summit of the peak, and is composed of tall trees under which dense masses of creepers and ferns grow in luxuriance. Numerous streams of pure fresh water intersect the narrow pathway through the forest, and owing to this and to the deep shade given by the trees, the air was quite refreshing, and in strik-

* Two species of these parrots are found in the Comoros, *Coracopsis comorensis* and *C. sibilans*, though neither have apparently been previously recorded from Mayotte. My informant gave me such a clear description of a black parrot, however, that there is no doubt that one of the above species is found on Mayotte.

† *Ixocincla madagascariensis*.

ing contrast to that of the lower parts of the island.

On the edge of the forest we found a large colony of fruit bats, which were hanging from the upper branches of the trees. They became very restless as soon as we approached, many taking to flight with shrill cries. Others climbed about from branch to branch, using the long claw on their wings as well as their feet, and hanging head downwards.

In the depth of the forest we came on a small party of lemurs,* which were feeding on the fruit of a densely foliaged tree. I shot one for identification, but was unwilling to sacrifice more of these charming little creatures, which showed not the slightest fear, but merely looked down at us with their great black eyes, and uttered continually their characteristic grunting noise.

While walking quietly along under the trees on the look-out for pigeons I surprised a family party of tenrecs, which were rooting amongst the dead leaves for insects. These creatures are much like large hedgehogs in appearance, but their spines are much softer; moreover, they have the same disagreeable stench as the fruit bats, and those I brought on board were not favourably received by my companions. In spite of its unpleasant smell the tenrec is used as an article of food in Madagascar, and is greatly appreciated

* *Lemur mayottensis.*

THE EDGE OF THE FORET D'AMBRE, MADAGASCAR.

by the natives. Possibly it has been introduced into the Comoro Islands from Madagascar on account of its edible qualities. The natives of the Comoro Islands also hold the lemur in great esteem as a delicacy, and they declare it to be, when young, quite as good eating as chicken.

Lower down the hill, amongst the sugar cane and other cultivated crops, were several species of birds, but most of these were without any doubt introductions, and as such were not worthy of notice. Numbers of small swifts* were flying round the cocoanut palms near our landing place. Owing to its rapid flight this swift is very difficult to shoot, so that only one specimen was obtained. This one fell on a patch of bare ground which was honeycombed by the burrows of land-crabs; before I could pick it up a crab, starting forward and seizing it, dragged it underground, and only with great difficulty was I able to open up the burrow and rescue the bird.

Green bee-eaters† were seen in numbers on the low ground amongst the cultivation, and it is interesting to note that this species ranges from Madagascar across Africa to the west coast.

Late in the afternoon we walked down to the mangrove swamp where our boat was waiting for us. Here we came across that peculiar fish, the walking goby.‡ It was in great numbers on the

* *Tachornis gracilis.* † *Merops superciliosus.*
‡ *Periophthalmus koelreuteri.*

mud of the mangrove swamp, where it spends most of its time, though always close to water. We found it extremely difficult to obtain a specimen. The fish stays quite still until one attempts to catch it, when it at once makes off across the water with a series of leaps, to reappear at some distance away on the mud or on a dead branch lying on the water's edge. Sometimes, as one walks through the swamp, numbers of these fish skip away in all directions, but however closely they are pursued they never remain long in the water. On land the pectoral fins are used as legs, and the fish is able to walk with ease over the soft mud. Species of this genus are found throughout the tropics.

Early on the morning of March 3rd, 1906, we left Mayotte and steamed away, bound for Diego Suarez, the principal port of Madagascar.

CHAPTER IX.

LA FORET D'AMBRE, MADAGASCAR.

THE day after we left Mayotte, Cape Ambre was sighted, and at noon we entered the harbour of Diego Suarez, the principal port of Madagascar. The town is strongly fortified and owing to a deep indentation of the coastline, it has an ideal harbour.

The governor of Diego Suarez was exceedingly kind. He granted us a permit for collecting during our stay, and also supplied us with free passes for the "train" from the town to Camp d'Ambre, which we wished to visit in order to see the great forest of Ambre. Moreover, a message was sent to the officer in charge of this camp to give us all the help possible during our stay there. We started at 7 o'clock in the morning and boarded the "train," which was in reality a tram consisting of two carriages drawn by four mules. The road was a steep ascent, and we were three hours in reaching the camp, which is 2000 feet above sea-level. The first part of the road led through fields of long grass, in which were great numbers

of quails, and every now and then one would rise close to the hoofs of the mules. Small dark-coloured larks—*Mirafra hova*—which were even more abundant, rose in flocks from almost under the wheels of the tram, and along the track in front of us swarms of these little birds were running.

After a few miles forest took the place of pasture land, and for a considerable distance the track lay between rows of tall trees, the branches of which almost met overhead. In this forest we saw a flock of Guinea fowls* which, being surprised at a bend in the track, took to flight close ahead of the tram. At some distance from the camp the tram lines came to an end, and the rest of the journey had to be performed in a large two-wheeled waggon drawn by mules, which brought us, after an hour's hard pulling, to our destination. We were met by the colonel commanding the camp, who conducted us to the hotel where rooms had been ordered. Camp d'Ambre is a convalescent station, and all soldiers suffering from fever are sent there to recuperate. The camp consists of barracks, officers' quarters, and a small, but clean and well-managed hotel. The surroundings are very beautiful. In front the hill slopes abruptly, allowing a distant view of Diego Suarez. On both sides the country is covered with grass, while in the rear lies the Forêt d'Ambre—a splendid virgin forest

* *Numida mitrata.*

FORET D'AMBRE, MADAGASCAR.

stretching for four hundred miles into the interior of Madagascar.

As soon as we had lunched we set off, under the guidance of one of the officers who was a keen entomologist, to explore a strip of forest in a small valley near the camp. Every valley in this neighbourhood was filled with luxuriant vegetation, while the sides and summits of the hills were covered with good pasture. In this particular valley a path led from the camp to a patch of cultivated ground, which was about half an hour's walk below us. The forest was full of birds, but they were not easy to see, on account of the height of the trees and the thick foliage. As we walked down, I saw a small hawk, much like a sparrow-hawk, sitting on a branch of one of the trees, and, on shooting it, I found it was *Astur franciscæ*, a species which is peculiar to Madagascar.

As we entered the cultivation at the bottom of the valley, a large dark-coloured bird flew overhead uttering a loud, but most musical, whistle. This proved to be one of the Madagascar "black" parrots—*Coracopsis vasa*. We were much surprised at the extremely rapid flight of this bird, as it dashed over us with outstretched neck, into the forest. The following day we had a good view of a pair of these parrots sitting in the top of a tree close to the camp, and we also became acquainted with a smaller species—*C. nigra*. These parrots are, we were informed, quite common in every

strip of forest in the neighbourhood of the Camp d'Ambre.

The cultivated ground at the foot of the valley was only a few acres in extent, and not many birds were to be seen there. A pair of wagtails,* feeding in a small stream of water, and a stonechat† were both interesting because found only in Madagascar; but on the edge of the cultivation I saw a bird of more general interest—the lark-heeled cuckoo.‡ The foot of this bird is most remarkable. The two toes which point forward are normal, but the two which project backwards are of a peculiar formation, one of them being fitted with a short curved claw, while the other has a long straight spur, like the hind claw of a skylark. This species also is found only in Madagascar, where it appears to be abundant. There were great numbers of weaver-birds in the cultivated ground, and they all belonged to the brilliantly coloured species (*Foudia madagascariensis*), which we had met with at Mayotte.

Early in the afternoon it began to rain, and this developed into a steady downpour which continued for the rest of the day. We were soon wet through, and in this condition had to attend a reception. We were received by the colonel commanding the camp, and his staff, and were so hospitably entertained that it was long after

* *Motacilla flaviventris.* † *Pratincola sybilla.*
‡ *Centropus toulou.*

FORET D'AMBRE, MADAGASCAR.

midnight before we got back to our hotel. However, at six o'clock next morning we were ready for an excursion into the big forest, and, after a time, our friends, who were to accompany us, arrived. An hour's walk brought us to the forest, and on entering it we followed for several miles a broad path, which was made by the Foreign Legion many years ago, and extends for twenty miles. The forest was full of life; brilliant butterflies fluttered over the vegetation bordering the path, and numerous birds flitted through the trees. The vegetation was so dense that the only way I was able to get specimens at all was by shooting those which came into the trees overhanging the path. Pigeons* and black parrots appeared to be numerous; and in the dense growth of bushes near the path there were reed-warblers of a species called *Bernieria madagascariensis*, peculiar to Madagascar. I had some difficulty at first in seeing the latter, as they rarely showed themselves, and the call-note, a deep "churr," was quite ventriloquial in effect. Flocks of white-eyes† were flying from tree to tree, searching for insects; their clear calls resounded from all sides, but owing to the great height of the trees they were usually out of range, and I only obtained one example. One of the most striking birds was the grey-headed love-bird,‡

* *Alectroenas madagascariensis.* † *Zosterops madagascariensis.*
‡ *Agapornis cana.*

well-known as a cage-bird in Europe. It is indigenous to Madagascar, but has been introduced into the Comoros and doubtless other islands. The male is green with a grey head and neck, while the female is green all over; both have a black bar across the tail. They were always in pairs, and their flight was wonderfully rapid.

We were somewhat disappointed at not meeting with lemurs in Madagascar. After having seen so many in the Comoro Islands we had had hopes of finding them in the Forêt d'Ambre, but although several hours were spent there we saw none of these beautiful creatures. The only mammal we actually met with was the tenrec,* several of which were caught by a small terrier belonging to our guide. In one place, guided by the barking of the dog, I found a family party of these strange-looking "hedgehogs" under the roots of a fallen tree, while, in an open tract of grass, lying near the edge of the forest, the dog found several and killed them all, in spite of the fearful smell which they emitted on being annoyed.

Early in the afternoon, after our walk in this fascinating forest, we returned to Diego Suarez. We descended in the same tram as that used for the ascent on the previous day, but so steep was the slope that the tram slid down of its own accord, and no mules were required until shortly before we reached the town. While passing through a

* *Centetes ecaudatus.*

strip of forest we had a good view of a fossa,* a fine cat peculiar to Madagascar, which stood in the middle of the track and gazed at the car. When we had approached to within about 50 yards, however, it dashed off into the forest. In another place we rushed through a party of guinea-fowls, old and young, which scattered themselves right and left to avoid the tram.

The following two days were spent in collecting in the neighbourhood of the harbour. Here were some of the largest sharks I have ever seen, and every morning two or three of these monsters were swimming idly round the yacht, but they would not take a bait of any kind. They were in every case surrounded by a shoal of sucking fish.

On March 9th, 1906, we left Madagascar for Glorioso Island.

* *Cryptoprocta ferox.*

CHAPTER X.

GLORIOSO ISLAND.

GLORIOSO, or l'Ile Glorieuse, which we sighted on March 10th, 1906, belongs to France, and is at the present time rented by a Frenchman, who grows there a large quantity of cocoanuts for export. It comprises besides the main island, which is from a mile and a half to two miles long and about a mile in breadth, a small, densely wooded islet, the Ile de Lise, separated from the main island by about three miles of very shallow water. Moreover, between these two islands is a third, which is little more than a large rock covered with grass, on which thousands of noddy terns,* as well as one or two pairs of boobies,† were nesting at the time of our visit.

Glorioso is a coral island, but to all appearances not of so ancient a formation as the neighbouring islands of Assumption and Aldabra. A deep layer of sand covers most of it, and on the leeward side this has drifted into a fairly high ridge. At the time of our visit, the greater part of the island was

* *Anous stolidus.* † *Sula leucogastra.*

LANDING AT GLORIOSO ISLAND.

overgrown with trees and scrub, which in some places had become so thick as to be impenetrable. Here and there were groves of cocoanut trees, and in one place a large plantation of maize.

Our information in Madagascar was to the effect that Glorioso had no inhabitants, so that when we put in to the sandy leeward shore we set off immediately in different directions to collect. It was with some surprise that, after a short walk, I came upon a large field of maize in which two negroes were working. They at once came to me, and informed me that the owner of the island wished to see me. I followed them to a small settlement, almost hidden by casuarina trees. Over one of the houses the French flag was flying. On entering the house I was met by the proprietor, who appeared to be somewhat indignant at our landing on his territory without permission. When matters were explained, however, he became quite friendly, and after a while gave us permission to collect or do whatever we liked on his property. He informed me that he had rented Glorioso for a term of years to cultivate all the spots suitable for cocoanuts. The palms which he had already planted appeared to be doing well indeed, for, although young, they had already borne an excellent crop of nuts.

There are five resident species of land-birds in Glorioso: all except one of these are identical with Madagascan species. The only bird which

has been described as peculiar is a dove,* but since we did not find it, although we walked nearly over the whole of the island during our short stay, I fear it must be nearly, if not quite, extinct. Great frigate birds were most conspicuous. The males were flying overhead, their scarlet pouches extended, while the females were sitting upon their nests—mere heaps of sticks placed near the top of tall trees—or were crowded together in the tree-tops in company with gannets.† Lord Crawford shot several adult frigate birds to take home in spirit, as it was not known by what means this bird extends its pouch during the breeding season.

Of the land-birds the white-eye, of the same species as that seen in the Forêt d'Ambre, Madagascar, was the most abundant, and it was to be found in great numbers all over the island. Now and again a black kite‡ was observed sailing overhead. This species is, as far as we could ascertain, only a winter visitor to Glorioso, and it is at no time abundant there. A few crows§ of the same species as that found in the Comoros and Madagascar are residents. It is somewhat surprising that there is no rail on Glorioso, as on both Assumption and Aldabra there are forms of this bird, distinct but nearly allied to the rail of Madagascar. We made particular enquiries of the proprietor

* *Turtur coppingeri.*
† *Sula piscator.*
‡ *Milvus migrans.*
§ *Corvus scapulatus.*

GLORIOSO ISLAND.

on this subject, but he assured us that there was no bird of the kind there.

Numbers of domestic fowls were running about in a more or less wild state. They did not show any signs of reversion to their ancestral form; on the contrary, those we met with were of all kinds and colours, though very small; many of them took to flight on being alarmed.

Butterflies and moths were numerous, and a species of hawk-moth was hovering round the flowers of a convolvulus in incredible numbers. On several occasions we took three or more at one sweep of the net.

There seems to be little fresh water here; as far as we could see there was none at all on the leeward side, and but a small pool near the settlement, though I believe there is a well near the house of the proprietor. This scarcity of fresh water may account for the rareness of the dove before mentioned, as pigeons and doves are known to require plenty of water. I presume that the fowls visit the settlement for water; at all events they were more numerous near the houses than elsewhere.

Both the green turtle* and the hawksbill† were abundant in the neighbourhood of Glorioso, the latter being the more valuable, as it is from the shell of this turtle that tortoise-shell is made. The green turtles frequent the sandy beach to deposit

* *Chelone mydas* (Linn.). † *Chelone imbricata* (Schweigg).

their eggs, and the shore was covered with their tracks. Two large ones were caught during our stay, and were kept alive on board until we reached Aldabra, when they were given to the overseer of that island.

The second day of our stay off Glorioso was spent on the neighbouring Ile de Lise. Landing first on Glorioso, we took on board the proprietor, who volunteered to act as our guide, and then we started on a three mile row to our destination. On the way we visited the rocky islet previously mentioned as lying between the two islands. Here was a large colony of sea-birds. Noddy terns were all sitting on their eggs, most of which were fresh. The eggs were laid in a shallow depression on the grass, and the "nests" were so close together that it was difficult to walk without treading on the eggs. The gannets had not commenced to lay, while a few sooty terns,* which were flying overhead, were evidently not nesting.

After a long and difficult "pull," owing to the quickly falling tide, we at last reached Ile de Lise. In spite of the thick growth of trees and bushes there was not a bird of any kind to be seen—no sign of a land or sea-bird, although, judging from the dried remains of sooty terns on a bare portion of the islet, I fancy that there must be a large colony nesting there at some period of the year. There is a roughly-built shed on the island, and close by

* *Sterna fuliginosa.*

GLORIOSO ISLAND.

are two huge iron tanks filled with rainwater, which is stored, as our host informed us, in case of a ship being wrecked there.

The most interesting event of our excursion was the discovery of several robber-crabs (*Birgus latro*), a highly specialized form of hermit-crab of huge proportions. It is a most formidable-looking creature, and, unlike the hermit-crab, carries no shell, but has the tail covered with a jointed "armour," like that of the lobster. The robber-crab is of a reddish colour, though in some specimens there is a tinge of blue both on the head and on part of the upper surface of the body. Its food is said to consist chiefly of cocoanuts, but as there are none of these nuts on Ile de Lise it feeds on maize, of which it devours enormous quantities. Curiously enough, although plentiful on Ile de Lise, this crab is not found on Glorioso Island, and our host was fearful lest it should by some means get across to his cocoanut plantations. I examined several heads of maize, from which the seed had been shorn off by the claws of this crab; each head of corn had the appearance of having been shaved with a sharp knife. The robber-crab is nocturnal here, and during the day hides in hollows up in the trees. We found several, but they were so securely ensconced that we had to hew part of the tree-trunks with an axe before we could get at them. Their strength is terrific. When held by the claws they twine their legs

round one's hand and squeeze with a vice-like grip. The huge claws are of prodigious strength, and one of our sailors, who caught a small specimen, had a piece of flesh cut clean out of the palm of his hand by a single nip. The two crabs which we secured were enclosed in a paraffin tin and brought on board. Either these, or two others, which we afterwards caught on Assumption Island, escaped from the tin by tearing off a large piece near the lid. After such an exhibition of strength, one can more easily credit the accounts of the destruction done to cocoanuts by these crabs.

On our way back to the ship we fell in with numbers of both kinds of turtles and several large fishes, probably barracuda. Leaving our host at Glorioso and boarding the "Valhalla," we shortly afterwards steamed away, bound for Assumption.

CHAPTER XI.

ASSUMPTION ISLAND.

EARLY on the morning following our departure from Glorioso, Assumption Island was sighted.

Assumption, like Glorioso, as I have previously mentioned, is of coral formation, but apparently of a much older date. It is about two miles long by a mile in width, at the broadest part, and is less thickly wooded than Glorioso. The central part is almost bare of vegetation, the only growth being a few low bushes (*hibiscus*), and a thin wiry grass which springs from the cracks and fissures in the coral. At one end of the windward side is a mass of drifted sand, about 60 feet in height, covered with low straggling bushes, while on the leeward side there are a few casuarina trees, and in one spot on the shore three cocoanut palms.

The shore is composed of sand, but the island itself is a rock-like mass of coral. Close to the shore are some deep wells containing water, but whether salt or fresh we were unable to ascertain. These wells are perfectly circular, and apparently of natural formation. That there is a constant supply

of fresh water is proved by the numbers of inhabitant land-birds, but, so far as we could ascertain the water-supply is entirely dependent on the rainfall. At the time of our visit there was plenty of it, every depression in the coral being full of sweet, clear water.

All these small islands to the north-west of Madagascar are inhabited by a few species of land-birds, and most of them have their peculiar species. Previous to our landing on it, Assumption had only once been visited by a naturalist—Dr. W. L. Abbott—who landed there some years ago, but I believe only for a very short time. We therefore looked forward to our visit with pleasurable anticipation, and we were not disappointed, for, apart from spending a most enjoyable time, we were successful in obtaining, amongst other interesting things, three previously undescribed birds.

On first entering the belt of trees and low bushes which fringes the shore, we were greeted by a chorus of squeals and grunts, as though a litter of pigs was hidden in the cover. This remarkable noise proceeded from a number of rails,* birds much like our water-rail but rather more stoutly built, and with wine-red breasts, barred on the flanks and belly with black and white. These rails were very tame, and walked about close to us in a perfectly unconcerned manner. We never saw

* *Rallus abbotti.*

ASSUMPTION ISLAND, INDIAN OCEAN.

one of them fly, or even try to do so: they trusted entirely to their legs when pursued. In several patches of bush we came across family parties of them, and although the young were mostly full-grown and feathered, we saw several which were still covered with black down. They were found on all parts of the island, except on the summit of the sandy hill on the windward side. While uttering its remarkable note, this rail stands quite still and puffs out all its feathers; from what I observed I should say that the skin of the throat is also expanded. The notes are loud—a strange mixture of squealing, grunting and booming—and during its song the bird appears to be gradually collapsing, until at the end it is once more of normal size. I have heard our English water-rail utter a somewhat similar noise when near its nest, but its cries are never so loud as those of the Assumption rail. We caught two of them alive and brought them safely to England, and they are at the time I write living in the London Zoological Gardens.

White-necked crows were present on the island in small numbers, and were nesting in the tallest trees, but I have no doubt that this species has recently wandered hither from Madagascar or East Africa.

Leaving the shore we found more open country, and came across some large turtle-doves with brown backs and claret-coloured breasts. These doves, of

which we obtained specimens, proved to belong to a hitherto undescribed species,* nearly allied to those inhabiting Aldabra and Glorioso; they were remarkably tame, and could almost be caught by hand. A few were nesting in the branches of the *hibiscus* bushes, and one nest that we found contained a single newly-hatched bird. Its flight is somewhat heavy and laboured, and the bird is remarkably unwilling to take to wing at all, spending most of its time running on the ground under the bushes, often in company with the rails, with which it appears to be on excellent terms.

We had not proceeded far before we heard the long bubbling note of a lark-heeled cuckoo,† and soon found the bird sitting in a thick bush near its nest—a large domed structure built of dried grasses, and containing two perfectly white eggs. This "cuckoo," which is, by the way, not a true cuckoo, builds its own nest and rears its own young. The Assumption species is closely allied to the one I have mentioned as seen in the Forêt d'Ambre, but is somewhat larger. Although they were extraordinarily tame, we were unable to catch any of them alive, as they rarely left the thickest parts of the bushes.

The tameness of several of the birds on Assump-

* *Turtur assumptionis*, Nicoll, "Bulletin Brit. Orn. Club," Vol. XVI., p. 105.

† *Centropus assumptionis*, Nicoll, "Bulletin Brit. Orn. Club," Vol. XVI., p. 105.

tion was noteworthy. At first thought it would seem to be accounted for by the fact that the island is uninhabited and very seldom visited; but if this be the reason, one would expect all the birds to be tame, which was not the case. Indeed, a small heron, which proved to be a perfectly new species,* was so wild that, although we saw a great number, I was able to shoot only a single specimen. Also the only small land-bird, a tiny sunbird,† which is found nowhere else, was by no means tame. On Saint Paul's Rocks, as I have mentioned in a previous chapter, one species of noddy tern is quite tame, while the other is extremely shy and wild, though there is probably no island in the world more seldom visited by man. It would seem, then, that tameness and timidity in birds are to a great extent specific traits.

Unfortunately, rats have been imported by some means into Assumption and are now very abundant. There is little doubt that they devour many eggs of the rail and of other birds which nest near the ground, and should the rats increase to any extent, there is a great danger of these interesting birds becoming extinct in the near future. All the rats which I shot were of a very pale coloration, probably due to the nature of the ground.

On the open ground near the foot of the sandhill

* *Butorides crawfordi*, Nicoll, "Bulletin Brit. Orn. Club," Vol. XVI., p. 105. † *Cinnyris abbotti*, Ridgway.

we came upon a flock of some twenty goats. They were of many colours—black, white, grey, and piebald—and some of the males were remarkably fine animals. They were excessively wild, and would not allow us to approach to within any reasonable distance of them. They were originally turned out to provide food for any shipwrecked crew, and, as it so happened, we ourselves were all but shipwrecked in the neighbourhood of this island a few days later.

The sea round Assumption swarmed with fish, and turtles were also very plentiful. At the time of our visit the latter were in great numbers close to the shore, where several were "turned." A number of "nests" was found by following the turtle tracks in the sand. Some contained fresh eggs, others were on the point of hatching, and several newly-hatched young were found.

Robber-crabs were also numerous, and appeared to be more diurnal in habits than they were on Glorioso. Many were seen crawling about under the bushes which fringe the shore. There were but three cocoanut trees, and they appeared to to have little if any fruit; neither was there any maize, so I imagine the crabs feed on the young sea-birds. Indeed, they appeared to be omnivorous, and greedily devoured a rat which I threw to them.

We landed on Assumption twice, getting ashore about eleven o'clock on the first day, and spending

NEST OF PINK-FOOTED GANNET (*Sula piscator*) ON ASSUMPTION ISLAND.
(Photographed by E. G. B. Meade-Waldo.)

about three hours there on the following morning. Leaving at mid-day on March 13th, 1906, we steamed to Aldabra, sighting it an hour or two later.

CHAPTER XII.

ALDABRA ISLAND.

VERY soon after leaving Assumption we sighted the island of Aldabra. I had previously no idea that the circumference of this island was so great—at the lowest computation it must be one hundred miles.

Aldabra is undoubtedly a huge atoll of very ancient formation. The coral of which it is formed is, like that of Assumption, of a deep brown colour. The lagoon enclosed by this atoll is very large, with several outlets into the sea, how many, we were unable to estimate in the time at our disposal. The principal outlet is situated on the leeward side, and, as the anchorage is marked on the charts as if it were in the mouth of this passage, we steamed up and dropped anchor clear of the tide "rip." The place, however, proved to be totally unsafe, owing to the rush of water entering the lagoon. Indeed, the tide came in with such violence that "Valhalla" soon dragged her anchor. We therefore put to sea again, cruising off the leeward side of the

ABBOTT'S IBISES ON ALDABRA ISLAND.

island until the morning, when a boat was sent from the shore to pilot us to a much safer and better spot, not far from the settlement.

Aldabra is the home of a huge tortoise,* which was at one time fairly abundant, but is now confined to a small area on the northern side. So difficult is it to get to this locality that we were unable to see the tortoises in their wild state. The Hon. Walter Rothschild rents the island of Aldabra from the British Government and protects the tortoises as well as a peculiar species of ibis, so that it is to be hoped that these interesting creatures may long hold their own.

A great part of the leeward side has lately been planted with cocoanuts, which are now growing on nearly every patch of sand above high-water mark. The settlement is composed of a few wooden huts, inhabited by negroes, who, under the supervision of an overseer, work in the cocoanut plantations and at turtle-catching and curing. Near the houses grow casuarina trees, with their beautiful feathery foliage ; they seem to be the tallest trees on the island, the greater part of the vegetation being a thick scrub, relieved occasionally by groups of trees of a species of *Ficus* and a few *pandani* or screw-pines.

In several parts of the island there are pools of fresh water, but, like those on Assumption, they seem to be dependent for their supply on the

* *Testudo elephantina.*

rainfall. All the water holes near the settlement were carefully covered over with branches, to prevent fouling by herons and other wading birds, which are to be found in great numbers.

Owing to the very shallow water between our anchorage and the land we were only able to go ashore at high tide, and we were thus somewhat handicapped during our short stay, since our time for collecting was necessarily curtailed.

Early in the afternoon of our first day we landed on the sandy beach, where we were met by the overseer, who conducted us to the settlement, about half a mile distant. But our arrival was followed by a heavy rain, which continued for the rest of the day, and obliged us to seek shelter in a house. I was, on that account, unable to do more than watch several species of birds. The commonest, and at the same time the most brilliant, was a weaver-bird,* a tame and familiar bird which fed in large flocks close to the houses. It has a brilliant coloration, the whole of the breast is of a rich scarlet, the abdomen is yellow, the back greenish with black streaks, and the rump is again scarlet. A flock of males presented a striking sight as they roamed the village in search of food; all were in full breeding plumage, and several pairs were nesting in the casuarina trees which surround the settlement.

Another familiar bird in Aldabra is the sacred

* *Nesacanthis aldabranus.*

ABBOTT'S IBISES ON ALDABRA ISLAND.

egret,* an interesting species with two distinct phases, or forms of plumage irrespective of age or sex. Wholly white, or entirely blue, examples are equally common, while one specimen which I shot was mottled with white and blue-grey, all the feathers being parti-coloured. These egrets collect in great numbers round the pools of fresh-water near the settlement, and when disturbed fly but a little way, quickly assembling again at the same spot. One can realise what a nuisance they must be to the inhabitants, so soon do they foul the scanty supply of fresh water.

A small kestrel and a sunbird were also fairly common in the casuarina trees; the latter is peculiar to Aldabra, though closely allied to the sunbird of Assumption, from which it differs only in having more yellow on the underparts.

Doves,† also, somewhat similar to those found on Assumption, were fairly numerous, but the Aldabra rail was not at all common, and I only met with two, both of which I obtained during our stay. The jet black males and grey females of a drongo shrike‡ were conspicuous inhabitants of the bush in the neighbourhood of the village, but they were exceedingly shy and difficult to approach.

As the tide rolled in, numbers of shore-birds left the sandy beach and flew over into the lagoon,

* *Demiegretta sacra.* † *Turtur aldabranus.*
‡ *Dicrurus aldabranus.*

where they remained until the tide began to ebb. The commonest and most striking of these was the crab-plover,* which appeared in enormous numbers. A few sanderlings were running about on the water's edge, and so many other birds that to mention them all would be tedious. The richness of Aldabra in peculiar forms will be realised by the fact that out of eighteen species obtained by us during our visit ten are restricted to this island, and one other is found elsewhere only in Madagascar.

We had been looking forward to seeing giant tortoises in a wild state during our stay, but in this we were doomed to disappointment. We found that it would take at least two days to visit the locality where they are now only to be found, and as we had not the necessary time at our disposal, we were reluctantly compelled to abandon our hopes.†

Aldabra is also famous for its turtles; large numbers are caught annually, their flesh being dried for export. Trays, shaped like huge sieves, were arranged in front of the settlement, and in these a great quantity of turtle-flesh lay exposed to the sun. The neighbourhood of the curing place was not at all pleasant, for although the drying flesh did not smell objectionably, the same could

* *Dromas ardeola.*

† This tortoise has been introduced into the Seychelles, where it is kept in a semi-domestic state, and later on we saw many of them in the tortoise "farms" in that group of islands.

ABBOTT'S IBISES ON ALDABRA ISLAND.

not be said for the deposits near by of other parts of the turtles. Close to one of the houses we saw a tame frigate bird—belonging to one of the men employed in the turtle industry—which was in beautiful condition and so tame that it could be handled.

We were most anxious to see the *Ibis abbotti*, a striking bird much like the well-known sacred ibis, and also closely allied to the *Ibis bernieri* of Madagascar, but differing from both so decidedly that it has been rightly claimed as a distinct species, confined to Aldabra, so far as is known. The overseer of the island informed us that the bird was seldom seen near the settlement, and that it nested some thirty miles away across the lagoon in a part seldom visited. Accordingly early on the second morning of our stay, we set out from the yacht in the steam launch for this ibis colony, taking on board the overseer and a pilot.

The lagoon, which is enclosed by the island or islands of Aldabra, is very shallow, but for some twenty miles there is a narrow channel of sufficient depth to allow a boat, drawing several feet of water, to proceed. This lagoon is of so great a size that during our passage through it we were frequently almost out of sight of land. The man we had taken as a pilot seemed to know every part of it, and without him we should have been unable to proceed for any distance. We passed numerous rocks, the bases of which were so water-

worn that they looked like enormous mushrooms. They were inhabited by noddy terns, which were sitting on their eggs.

After three hours' steaming, during which we saw many turtles and sharks, we came into very shallow water. The tide was ebbing, and we were forced to take to the dinghy which we had been towing astern. A row of about an hour then brought us to our destination, within half a mile of the place where the ibises were said to be nesting. The ground here was of the same formation as that in the neighbourhood of the settlement—a mass of ancient brown-coloured coral covered with long grass and clumps of bushes.

After a very few minutes' walk we came on a few scattered pairs of Abbott's ibis feeding on the margin of a large pool of rain-water. I soon obtained a couple of old birds. Their necks, like those of the sacred ibis, were bare of feathers, and the skin was black and wrinkled; their eyes were of a pale china-blue. We then came to a more open piece of country, covered with grass and intersected by narrow rivulets of water, in one of which were two young ibises. They were ridiculously tame, and allowed of such a near approach that several photographs of them were taken without any difficulty.

In a clump of fig trees, shortly afterwards reached, the ibises were very numerous; many were perched in the trees, while many more,

RIVER NEAR PORT VICTORIA, MAHÉ, SEYCHELLES.

(*Photographed by E. G. B. Meade-Waldo.*)

chiefly full-grown young birds, were walking in a pool of fresh water searching for food. In the middle of the pool several were sitting together on a bare rock. They appeared to be tame enough to photograph at close quarters, so I at once unpacked my tripod camera and set it in position, using great care not to frighten the birds. This precaution was, however, needless, for they were not only quite fearless but so inquisitive that they waded across the pool, and, coming close up to the camera, began to peck at the tripod. We drove them back to the rocks, but before a plate could be exposed they were back again inspecting the legs of the camera; it was only by repeated threats—a novel experience for them and for us—that we could keep them far enough away to enable us to get a series of photographs in proper perspective. After this we allowed them to come close up, and when we had examined them at very close quarters, we decided to try to catch one. To our astonishment they would all allow themselves to be picked up, nor did they show any signs of fear when released, but merely ran round our feet plucking at the tags of our boot-laces. I have seen many wild birds which showed little fear of man, but have never come across such extraordinarily familiar birds as these ibises.

We counted all the individuals we could on this part of the island, and estimated that there were

about forty pairs. I should imagine that there are several other nesting places, but, owing to the great size of the island and to the difficulties of landing on most parts of it, we were not able to find another colony.

While photographing these birds I noticed some pigeons flying round the clump of fig trees, and as they appeared to be constantly settling there, I walked up to the foot of one of the trees to wait for them. In a very short time I had shot four examples, which proved to be *Alectroenas minor*—a species peculiar to Aldabra. In appearance they were not unlike the Comoro pigeon, but were very much smaller. Some young birds were in their first plumage, which is not only much greener than that of the adults, but each feather is tipped with yellowish buff, giving the bird a peculiar spangled appearance. In the shade of the trees numbers of robber-crabs were creeping, and they showed considerable annoyance at our presence, waving their claws in a threatening manner whenever we approached.

After a very pleasant time spent amongst the ibises and pigeons, we walked back to our boat and put off for the steam launch. The tide had fallen considerably, and it was a long time before we made out the launch in the distance. On the way we landed at a small deserted village, where half an hour was spent in search of the Aldabra rail, only two of which were seen. A pair of

MAHÉ ISLAND, SEYCHELLES.

Aldabra doves* was also procured, and then, as it was getting late, we hurried on to the launch and steamed away. Darkness fell, however, long before we sighted the yacht, and had it not been for our pilot we should have had great difficulty in getting aboard that night. The water was so low that it was necessary to keep exactly in the middle of the channel, a task by no means easy, for even under the guidance of the pilot we once missed our way and suddenly found ourselves in very shallow water, from which we had to make our way with extreme caution.

Aldabra is undoubtedly of a great age, as is evidenced by the fact that nearly all its birds have become differentiated from the nearest allies found elsewhere. Amongst these the ibis, dove,* and a nightjar† are, perhaps, the most remarkable. The giant tortoise is also peculiar, although, as I have mentioned above, it has been exported to the Seychelle Islands, where numbers are kept in a semi-domesticated state.

After leaving Aldabra Lord Crawford intended to pay a visit to Cosmoledo and Astove, two small coral islands in the immediate neighbourhood. As far as I can ascertain, these islands have never been visited by a naturalist, and they are said to be inhabited by several species of birds. But during the night, while steaming to Cosmoledo, we were carried several miles out of our course

* *Turtur aldabranus.* † *Caprimulgus aldabrensis.*

by a strong uncharted current, and in the pitch darkness, in which it was impossible to see more than a few yards ahead, we ran ashore on the leeward side of Assumption. Here we remained fast for some twenty-four hours, fixed on the sand. I shall not soon forget that night. As soon as we made sure that we were fast, and that the ship had suffered no harm, I finished off the birds I was engaged in skinning, then joined my companions in watching dismally the water as it gradually fell away from our bows.

At daybreak all arrangements were made to try to get the ship off at high tide. An anchor was carried out astern, and as the water rose we hauled on it, at the same time working the engines at full speed astern, but to no purpose. All the time, however, "Valhalla" was grinding out for herself a bed in the soft sand, and during the next high tide she floated off, the captain having previously lowered all the boats and cables, and a quantity of coal to lighten her. The yacht was, fortunately, none the worse, and, as soon as she was shipshape again, we steamed away for the Seychelle Islands.

Thus the fauna of Cosmoledo and Astove is still unknown. I feel sure that these two islands would well repay a visit, as we were told by people in the Seychelles that they abounded with bird-life, but should any of my readers ever attempt to visit them I would suggest that they approach them in daylight.

CASCADE, MAHÉ, SEYCHELLES. HOME OF *Alectroenas pulcherrima.*

(Photographed by Mr. E. G. B. Meade-Waldo.)

CHAPTER XIII.

SEYCHELLE ISLANDS.

On 22nd March, 1906, Mahé, the largest island of the Seychelle group, was sighted, and shortly afterwards we came to anchor off the town.

Lord Crawford's intention was to take the yacht round to all the most interesting islands of the group, but owing to very bad weather the greater part of this plan had to be abandoned. However, we spent sixteen delightful days here, and visited the islands of Praslin and Felicité.

Mahé rises almost perpendicularly from the sea to a height of about 2000 feet. Deep valleys run down from the summit to the sea-shore, and the island is for the most part covered with forest.

During our stay we were most kindly entertained by Mr. H. Thommasset, who invited us to his beautiful "Cascade Estate," which is situated about 1000 feet above the sea. Vanilla was the principal crop grown at the time, though, owing to a fall in the price, it is not now nearly so profitable as it formerly was. For this reason a

large quantity of rubber-trees were being imported and planted, and these promised to do well.

Mr. Meade-Waldo and I started out to pay our visit early one morning. Driving from Mahé to the foot of the cascade, we engaged two natives to carry our baggage, and climbing up the winding pathway to Mr. Thommasset's house—an exceedingly steep ascent—we were immediately rewarded for our exertions when we reached, just below the house, a magnificent sheet of water which fell in a glorious cascade over the brow of the hill into the valley below. We stood for a time close to the waterfall, and were deliciously cooled by the refreshing spray as well as by the draught made by the rush of the water. From this a few minutes' walk brought us to the Cascade Estate. The house, situated on a small plateau, commands a splendid view; the well-wooded ravine, with its beautiful waterfall, runs sharply down to the shore, while far away in the haze of distance rises the island of Praslin, and, nearer, small islets, covered with vegetation, stand out in clear relief against the deep blue sea.

Mr. Thommasset's estate is one of the best places on the island in which to observe birds, but, unfortunately, indigenous species are few. A number of different kinds of "foreign" birds have been introduced, and it is probably owing to the excessive numbers of Indian mynahs that the indigenous species are so scarce near the

WATER-WORN GRANITE ROCKS, SUMMIT OF MAHÉ, SEYCHELLES.
(*Photographed by E. G. B. Meade-Waldo.*)

town; in fact, the original avifauna is threatened with extinction. These mynahs have spread even as far as the Cascade Estate, but in the town itself they are in such numbers that every garden and tree is covered with them.

The Madagascar weaver bird* has also, most unfortunately, been introduced. The history of this stupid act, as told me on good authority, is that two neighbours went to law concerning the ownership of a certain field which each claimed as his property. The loser, to be revenged on his adversary, brought from Madagascar a cage full of weaver birds, which he liberated on his neighbour's land. In any case, whether this account of the origin of the birds be true or not, the effect of their introduction has been that it is now impossible to grow any rice or grain on Mahé, and at the present time these "weavers" are, next to the mynah, the commonest land-birds.

Nearly all the indigenous land-birds of the Seychelles are peculiar to the group, and one species of sunbird† is found only on Mahé, the other islands being inhabited by a somewhat similar species, which differs in that it has the tufts of feathers on the breast of a fiery-red colour instead of yellow. Both species are otherwise dull brownish-grey, and are thus very different

* *Foudia madagascariensis.*

† *Cinnyris mahéi.* "Bull. B.O.C.," Vol. XVI., p. 106.

from the brilliantly-plumaged sunbirds of Africa, which in general coloration are perhaps even more beautiful than the majority of humming birds. Dull coloration is characteristic of other birds of the Seychelles. The white-eye* is of a dull brownish-grey instead of being bright yellow and green, as are the majority of the species of this genus, while the Seychelle parrot† is also greyish-brown with but a faint tinge of yellow. The Madagascar and Comoro parrots, however, are similar in this respect. It is remarkable that on this group of islands there should be three such dull-coloured species belonging to genera noted for their bright-coloured species. Possibly this is the effect of isolation for a very great time, and these birds may be the oldest members of the avifauna of the Seychelles.‡

During the night spent at Cascade Estate I made several unsuccessful attempts to shoot a small owl, which was calling continually throughout the night in a large tree just outside the house. This owl—*Gymnoscops insularis*—Mr. Thommasset informed me he frequently heard, and occasionally saw as it flew by day when driven out of its hiding-place amongst the rocks or hollow trees. A small kestrel§ appeared to be not very abundant, but I think that it may be

* *Zosterops modesta.* † *Coracopsis barkleyi.*

‡ The Seychelle Islands are like St. Paul's Rocks, of neither volcanic nor coral origin.

§ *Tinnunculus gracilis.*

LANDING PLACE, FELICITÉ ISLAND, SEYCHELLES.
(*Photographed by E. G. B. Meade-Waldo.*) [128]

more so than a casual visitor would imagine, for it is extremely tame and will sit for hours motionless and hidden amongst the thick foliage.

A fine fruit-pigeon* is not uncommon on the higher parts of the Seychelle Islands. This bird is also exceedingly tame, but, unlike the kestrel, it looses rather than profits by its fearlessness. It is good to eat, and being readily caught by means of a noose fastened to a long stick, it falls an easy victim to natives, by whom the flesh is greatly esteemed. The bird much resembles the previously mentioned pigeon of the Comoros, but is somewhat larger and has a deep crimson crown.

In the grounds of Government House we saw a large number of Aldabra tortoises enclosed within a stone wall. Some of them were of large size, and a great many were newly hatched. We were informed that they bred freely in confinement, and that the young grew very quickly. These tortoises are used for food by the natives, and on visiting the market we saw several tethered by the leg and exposed for sale. On all the islands and inhabited islets of this group there were tortoise-farms. We were astonished to find how easily these huge creatures were able to climb. On Felicité, for instance, there was a walled enclosure, one side of which was formed by a high mass of rock, and the tortoises were

* *Alectroenas pulcherrima.*

climbing over this or lying at rest on narrow ledges.

In nearly all these farms the tortoises bear a number which is painted in white on the shell. Many farm-owners keep a record of all their stock, while at Government House a complete register is made with the dates of hatching and so forth. In the latter place we rode upon the largest tortoise. This creature was of a fierce disposition, for with outstretched neck and every appearance of anger he attacked all who ventured near him, and we were told that he would bite if allowed the opportunity. All these tortoises have been imported from Aldabra, and there are now probably considerably more individuals on the Seychelles than on the former island.

After we had spent about a week on Mahé the ship steamed across to Praslin, about twenty miles distant. We anchored in Curieuse Bay, an inlet of Praslin, and sheltered by the island of Curieuse, which lies close on the other side of a narrow channel.

A short walk on shore during our first afternoon was not productive. There were fewer birds than on Mahé. A paradise flycatcher* of the size of a sparrow, but jet black, with the central tail-feathers prolonged to a great length, was the most interesting bird seen. It is known locally as the "veuve," or widow, but apparently

* *Terpsiphone corvina.*

VALLEY OF THE "COCO DE MER," PRASLIN ISLAND, SEYCHELLES.

it is not common, as during our stay only two were met with. A thrush, or "bulbul"* is by far the most abundant land-bird on Praslin, as it is also on most of the other islands of the group. Its notes are among the most unmelodious sounds I have ever heard. All day long it pours forth harsh shrieks. Several of them were brought home alive, and regularly every morning at daybreak they would begin to scream, rarely ceasing before sunset. In captivity they are of a most quarrelsome disposition, though in a wild state they are usually seen together in parties of from two to twenty individuals.

One of our chief objects in visiting Praslin was to get a specimen of the black parrot.† These birds are strictly protected by Mons. E. Boulle, the owner of a greater part of the island, and through his kindness we were able to see this rare bird in a wild state. It is now only to be found in one locality, where, close to Mons. Boulle's house, numbers come to feed on the flowers of a magnolia tree. To this tree we made our way, but the only birds we could find on our arrival were numbers of thrushes and sunbirds. I shot two of the former and one of the latter; while packing them up a native came to tell me that he had just seen two parrots higher up the hillside. I started off, but after spending a short time wandering about amongst bushes, a most unlikely place for

* *Ixocincla crassirostris.* † *Coracopsis barkleyi.*

parrots, I descended the hill again and took up my station under the magnolia tree. After an hour's interval I heard a musical whistle, reminding me of the call of the Madagascar black parrot, and, to my delight, the coveted bird came flying straight to the tree. A minute later it was in my hand; it proved to be immature, and though full-grown, was not so dark as an adult. The general colour of its plumage was a sooty-brown with a yellowish wash on the chin and throat, and a distinct greenish sheen on the wing. As no more parrots appeared, we started back for the ship. I was told by one native that he had never seen more than ten of these parrots together at a time, but Mons. Boulle assured me that he had quite recently seen "a hundred" sitting together in this particular magnolia tree, which is the only one of its kind on the island.

Next day we steamed across to Felicité, a small island given over to the cultivation of cocoanut trees, with which it is for the most part covered. We were conducted over it by the owner, Mr. Birgne. The most interesting bird here was the fruit-pigeon of the same species as that found on Mahé. It was extremely abundant, owing entirely to the care Mr. Birgne had taken to preserve it. He told me that he never allowed it to be caught or molested in any way.

On returning to Praslin we landed in Marie Louise Bay, at the foot of the "Coco de Mer"

"COCO DE MER," PRASLIN ISLAND, SEYCHELLES.

Valley, and spent the afternoon amongst these remarkable double-cocoanut trees, which are found in a wild state nowhere except in this one small valley. They are not so tall as the common cocoanut trees, but the leaves are much larger and of a great breadth. The fruit is of immense size, somewhat resembling a huge double-cocoanut, and is said to take many years to ripen; its kernel is of a grey jelly-like substance, and the taste is very insipid—far inferior to that of the common cocoanut. The principal use to which the nut is put is for the manufacture of bowls for water or food; the shells, when split in half, make capacious basins or dishes, and are largely used by the natives of India for rice.

The first description of the Coco de Mer was given to some of the fruit found floating in the open sea, which was supposed to belong to a sea plant, and so received the name of "Coco de Mer." When the Seychelles were discovered, the fruit of these trees in Praslin was found to be identical with that of the so-called Coco de Mer. Many of the trees have now been introduced into Mahé, but their growth is exceedingly slow, and, so far as I know, they have not as yet borne fruit.

During the night the yacht lay at anchor at the foot of the Coco de Mer Valley, and early in the morning we started for North Cousin, a small islet to the south and east of Praslin. As we made our passage the wind rose; rain fell in tor-

rents, and it became impossible to see more than a few yards ahead. For an hour and a half every sign of land was blotted out, although there were islands on all sides; in fact, the wind increased to such a degree that when the weather finally cleared our position was found to have remained practically unchanged for over an hour, although the ship had been kept at full speed. The sea had risen so high that landing upon Cousin Island became an impossibility, and we were forced to return to Mahé. Several more days were spent at anchor during incessant rain; frequently a squall would spring up without warning, and several times the "Valhalla" dragged her anchor.

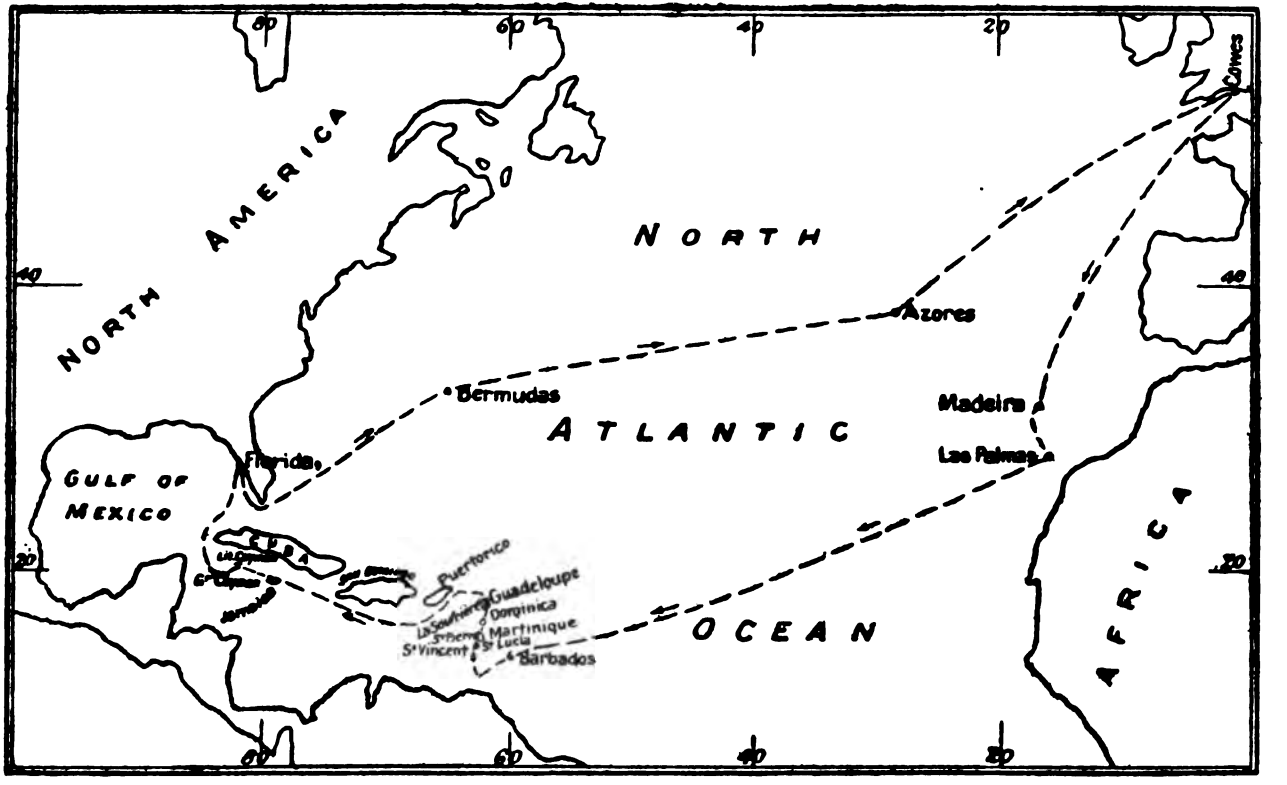
On one occasion we had a visit from King Prempeh, who is kept in exile on Mahé. He came on board in full native dress, though some persuasion was required before he would discard the top hat and frock coat in which he usually appears. Prempeh seems to be treated far better than he deserves, for if all reports are true, he was one of the most bloodthirsty tyrants that ever existed; and I must say that his appearance does not belie this, for a more repulsive-looking creature I never saw. Of immense bulk, with small head and low retreating forehead, he was not prepossessing as he waddled about the deck. A phonograph and pianola amused him exceedingly, and when an iced drink was given to him he took the

"COCO DE MER," PRASLIN ISLAND, SEYCHELLES.

liveliest interest in it, though he must have seen ice during his "residence" in the Seychelles.

The day before we left Mahé Lord Crawford gave a "garden" party on board, which was attended by nearly all the inhabitants; we thus had an opportunity to bid farewell to our good friends before we sailed in the early morning for Aden, *en route* for home.

A VOYAGE TO THE WEST INDIES.



SKETCH-MAP TO SHOW THE COURSE OF THE VOYAGE TO THE WEST INDIES.

ST. PIERRE, MARTINIQUE, ONE YEAR AFTER THE ERUPTIONS.

CHAPTER XIV.

MARTINIQUE.

On December 18th, 1903, the "Valhalla" sailed from Cowes for the Canary Islands, *en route* to the West Indies.

On 5th February, 1904, we dropped anchor at Port de France, which has been, since the destruction of St. Pierre, the principal harbour of Martinique. Our object was to obtain permission from the Governor to visit the ruins of St. Pierre, which was destroyed by an earthquake on 8th May, 1902.

It may be well to mention that the destruction wrought by the volcanic eruptions at Martinique and St. Vincent was not nearly so complete as many appear to think. It seems to be supposed that these islands suffered to such an extent that their peculiar species of birds became extinct at the time of the volcanic disturbances. This is not so, for in both islands the only damage done was in the immediate vicinity of the volcanoes; thus, on St. Vincent only a very small portion of the country has been destroyed; the

grass and other vegetation in 1904 was again showing over the sides of the Soufrière.

On St. Vincent the fine parrot—*Chrysotis guildingi*—which is found nowhere else in the world, has not yet become extinct, and is still found in some numbers on the high peaks.

On Martinique the havoc caused by the eruption was more serious, inasmuch as St. Pierre, its principal port, was entirely destroyed with its inhabitants.* Little damage, however, has been done to the surrounding country. The trees on the top of a neighbouring range of hills have been burned, but the country at the foot of these hills is quite untouched. Several villages within a couple of miles of the city are quite uninjured, and are inhabited; the sides of the hills up to within a short distance of the summit are covered with vegetation, and show no signs of injury.

The country round Port de France is almost entirely cultivated—sugar being the principal crop—even to the tops of the peaks. We were informed that, owing to this excessive clearance of the trees, the rainfall has been considerably lessened, and at times there is a considerable shortage of fresh water. A strict law has, I believe, now been passed against the felling of timber. Owing to this scarcity of trees, the land-birds

* There is a story that one man, a black, was rescued from St. Pierre owing to the fact that, being in a prison cell underground at the time, he escaped the choking ashes which covered the town. I do not vouch for this story, but mention it as it was related to us in other islands of the West Indies.

are by no means numerous, and the only ones seen were a few starlings,* grass-finches,† and flycatchers.‡

At one time most of the islands of the West Indies were inhabited by peculiar forms of parrots, while several parroquets inhabited the larger islands. Many of these are now extinct, including the macaws, of Jamaica, and at the present time the parrots of St. Vincent, St. Lucia, Dominica, the Cayman Islands, Cuba, and Bahamas are the only living representatives of this group. No parrot or parroquet is now to be found on Martinique, and this is scarcely surprising, as there are no forests existing there of sufficient size to offer a home for these birds.

The Governor of Martinique having kindly granted us permission to land at St. Pierre, we steamed round to that place on 7th February. The whole town has been completely destroyed, and that part which was situated at the foot of Mont Pelée is buried under the ashes and *débris* from the volcano.

The anchorage has not been disturbed in any way, so that we steamed up close to the shore and dropped anchor in the once prosperous harbour. Lowering a boat we landed, and started off for a walk, or rather a scramble, through the ruins of the town. The largest wall standing was

* *Quiscalus inflexirostris.* † *Euethia bicolor.*
‡ *Elainea martinica.*

that of the cathedral. All the other buildings had completely collapsed, though in some places a few feet of wall still remained in an upright position.

The ruins of the town were becoming covered by a creeping plant bearing scarlet flowers, while bread-fruit trees were shooting up amongst the broken-down houses and even in the streets. The main street was still discernible, and, although one's passage was blocked by *débris* in many parts of the smaller thoroughfares, it was quite easy to walk over a great part of the town. The effects of the earthquake were such that the walls of nearly all the buildings fell inwards; the whole of the roof and the tops of walls of the cathedral have fallen inside the building, and the same is the case with nearly all the houses.

A number of persons were searching amongst the ruins for anything valuable or curious, and from one of them I bought a small blue glass tumbler which had been made shapeless by the fierce heat to which it had been exposed. One of my companions purchased a small "Crown Derby" coffee cup and saucer for a shilling. One of our sailors found a quantity of wire nails run together into a solid block, weighing, perhaps, a couple of pounds, and several similar bundles were offered to us. One man was "hawking" a marble figure of Venus, while another offered us a bust of the

LEAF-INSECTS FROM THE SEYCHELLES.

Pope, both quite undamaged by the heat, and showing no signs of having been buried in the ruins.

During our visit the top of Mont Pelée was completely hidden by clouds of smoke, which had been pouring out ever since the eruption.

A few birds were seen amongst the ruins of the town. We were informed that during and shortly before the disturbances on Martinique and St. Vincent, enormous flocks of pigeons* appeared on the island of Grenada, where they remained for a fortnight. During the eruption, and for several days afterwards, quantities of dust fell over many of the islands, especially the Barbadoes, where it was collected in bottles and sold to visitors.

* *Columba squamosa.*

CHAPTER XV.

GRAND CAYMAN ISLAND.

AFTER leaving Jamaica on 8th March, 1904, we laid our course for Grand Cayman, the largest of the three islands of the Cayman group, which lies to the west of Jamaica.

The Cayman Islands have been but rarely visited by naturalists, and as they are inhabited by many species of land-birds which are found nowhere else, we looked forward to spending an interesting time there.

Grand Cayman, Little Cayman, and Cayman Brac form part of the Colony of Jamaica, and are situated between the meridians of 79° 44′ and 81° 26′ W., and the parallels of 19° 44′ and 190° 46′ N. They are said to have been discovered by Columbus on his return voyage from Portobello to Hispaniola (now Hayti), and were named by him Las Tortugas, owing to the number of turtles which abound on the coast. The present name is supposed to be derived from caiman—an alligator, which Grand Cayman somewhat resembles in shape when viewed from the east.

Grand Cayman is about seventeen miles in length, and from four to seven miles in breadth. On the northern side is the "Sound"—an expanse of shallow water about six miles in length off George Town, the capital. Ships, as a rule, find this the best anchorage, although its advantage somewhat depends on the prevailing winds.

The island is well covered with vegetation,* the largest trees being mangroves, which here rise to a considerable height, while a low growing species of palm provides useful material for thatching and the manufacture of baskets, etc. Like the smaller islets of the group, Grand Cayman is composed of coral, and in no spot is it many feet above the level of the sea. There is, however, in most parts sufficient soil for the cultivation of sugar cane, sweet potatoes, and other plants, and in many places there is a luxuriant growth of grass which is used as pasturage for a small number of cattle. Poultry and pigs are also reared, and besides providing food for the inhabitants, are occasionally shipped to neighbouring islands.

The inhabitants of the Cayman Islands are, I believe, descended from buccaneers who at one time made these islands their headquarters. They are of a fair complexion, and those who live at a distance from the port are extremely

* An orchid, said to be peculiar to it, grows in quantities on Grand Cayman.

hospitable. A number of small schooners have been built on Grand Cayman, and are used for trading between the islands of the group and Jamaica. The principal trade is in turtles, which are for the most part caught on the coasts of the mainland, and brought to Grand Cayman, where, until required for shipment, they are kept in an enclosed portion of the Sound.

We arrived off George Town too late in the afternoon to go ashore the same day, but early the following morning we landed and called on the Governor, His Honour F. Sheddon Sanguinetti, who most kindly gave us a special permit to collect birds. The time of our visit corresponded with the close time for wild birds, and a law for their protection is very properly enforced.

Having been provided with a guide in the shape of a small native boy, one of my companions and I started off for a long walk into the interior. Before we had gone far from the settlement we became greatly struck by the abundance of bird life. In no other island in the West Indies did I see such numbers of so many different kinds of birds as on Grand Cayman. In each patch of vegetation we came upon fresh species, and we were very soon busily engaged in observing and collecting them.

Most of the land-birds are peculiar to the island, though there are a considerable number of immigrants from America which spend the

FEMALE LEAF-INSECT, 2ND GENERATION, BRED BY MR. W. H. ST. QUINTIN, FROM EGGS LAID BY INSECTS BROUGHT HOME ON "VALHALLA" FROM SEYCHELLES.

winter there, and one, at least, of these appears to have established itself as a resident species. This is the crowned warbler,* a small bird of a dull greyish-brown above, white below, with a crest of yellow feathers. Two other species of this genus are found on the island, and one—*Dendrœca auricapilla*—which is very common on Grand Cayman, but is found nowhere else, is a most handsome little bird of a beautiful golden canary yellow, with the crown of the head tinged with chestnut. We found it close to the settlement, where small flocks were flitting about through the trees and bushes. Nearly all the West Indian Islands possess species closely allied to the Cayman golden warbler, but the latter surpasses all others in the purity and brilliance of its colouring. The other species—*Dendrœca vitellina*—is smaller and of less brilliant coloration, the general plumage being greenish-yellow slightly streaked on the sides of the neck with black. This bird is also peculiar to Grand Cayman, and it is interesting to note that another warbler—*Dendrœca discolor*—an American species, much resembling it, though perfectly distinct, is a winter visitor. A pleasant surprise awaited us later, for on Little Cayman yet another species of this genus was found, and this one proved to be new to science.

One cannot walk far on Grand Cayman without seeing the almost grotesque-looking black ani, or

* *Dendrœca coronata.*

cuckoo. This bird is extremely abundant, as it is in some of the other West Indian Islands, and also in Brazil. Several individuals are usually seen together, and they roam over the pasture land in follow-my-leader style, uttering a monotonous bubbling cry. They are said to be partial to the company of cattle and sheep, and to relieve them of their ticks, but I cannot vouch for this on personal observation. Usually they were, when feeding, sitting together in a flock on the grass, amongst the roots of which they were apparently searching for insects. They are of about the size of our cuckoo, but jet black in colour, though old examples in fresh plumage have a bluish sheen on the upperparts. The bill is peculiarly shaped, being deep, with the upper mandible strongly arched. Common though these birds are, I believe that little is known of their nesting habits. Several females are said to lay their eggs in the same nest, but they do not, like true cuckoos, deposit their eggs in the nests of other birds.

Another and more handsome cuckoo was *Coccyzus maynardi*, of about the same size as the black ani, but of totally different coloration, the upperparts being clove-brown, the tail blacker, and edged with white and black, and the underparts buffish white. This bird did not appear to be so abundant as the ani, and during our stay we saw but one example.

Mocking-birds* and Carolina thrushes† were very common, and we also shot specimens of a handsome woodpecker‡ peculiar to the island, and one of the tamest birds I have ever seen.

Grand Cayman is the home of a species of parrot§ found nowhere else. We wished to obtain specimens of this bird, but were told that they were all gathered together in the tallest mangrove trees on the north side, to which they retire for nesting, but as soon as they had finished breeding they were to be seen in numbers all over the island. Several were brought alive on board, and some were purchased for about six shillings apiece—a very low price for such a rare bird. I could not get any wild specimens near the settlement, so I arranged to go over to the north end for them. As I had but twenty-four hours at my disposal I had my doubts as to whether I should even see any parrots. However, I resolved to try, and accordingly the Governor placing a guide at my disposal, we set out late one afternoon, and after a drive of some miles arrived at our destination shortly before dark. Here we obtained rooms in a farmhouse, where I was considerably cheered by the information that a number of parrots had been seen close by a few hours before.

At daybreak next morning we started for a long walk to the nearest belt of mangrove trees. For

* *Mimus orpheus.* † *Galeoscoptes carolinensis.*
‡ *Melanerpes caymanensis.* § *Chrysotis caymanensis.*

several hours we saw no signs of either mangrove trees or parrots, and I began to think that our journey had been in vain. Presently, however, we reached a small farm, where we stopped for a short time at the invitation of the owner. This man told me that every morning, shortly after daybreak, the parrots came down to his land to feed on the fruit of the guavas, and that only an hour ago he had seen several. We thereupon started off again, and after an hour's walk came up to the mangroves, a belt of tall trees about half a mile in length. Before we reached them the discordant cries of the parrots were plainly heard, and presently a party of them flew across the path. We entered the wood, and, after waiting a short time, I shot a fine adult bird. It was very handsome, the feathers of the upperparts being green, edged with black, the forehead white, and the underparts of a rich crimson, banded with black.

We obtained two more parrots on our way back, and finally got on board the ship late in the afternoon after a most successful and enjoyable excursion.

It is somewhat remarkable that Grand Cayman should have a peculiar form of parrot, while Little Cayman is inhabited by a Cuban species. This, however, is one of many cases in which isolation produces a new form or species. Some species of birds appear to change more rapidly than

others. The Cayman Islands offer some good examples of this, for apart from the two species of parrots, Grand Cayman has a peculiar starling,* while Little Cayman is inhabited by the Cuban species,† and, as already mentioned, both islands have peculiar forms of warblers. There are several other equally interesting cases. On the whole, the avifauna of the Cayman Islands seems to be nearest to that of Cuba, though a new species of tyrant flycatcher,‡ which was found by us on Grand Cayman, is more nearly allied to a species found on the Bahamas.

On 13th March we left Grand Cayman, and steamed to Little Cayman, off which we anchored early the same afternoon.

* *Quiscalus caymanensis.* † *Q. gundlachi.*
‡ *Pitangus caymanensis.* "Ibis," 1904, p. 582.

CHAPTER XVI.

LITTLE CAYMAN ISLAND.

LITTLE CAYMAN ISLAND is considerably smaller than the main island of this group. It is of the same formation, but the centre is partly covered with mangrove swamps.

Lord Crawford had not placed this island in the original programme, but he was anxious to obtain a series of specimens of a small gannet, none of which the British Museum possessed. This bird was supposed to be found only on the Cayman Islands, but we could not obtain any on Grand Cayman, and decided to visit this smaller island where, as we were informed, great numbers bred.

The winds on Little Cayman are variable. At the time of our visit the anchorage we chose on the lee side was the most sheltered, though it is often impossible to anchor there, in which case ships have either to anchor off the settlement in somewhat rough water or stand off and wait for the wind to drop.

Some of the inhabitants having seen the yacht approaching, were waiting for us when we landed, and on being questioned as to where the gannets

were, they at once offered to take us to their haunt, which proved to be close to the settlement and about three-quarters of an hour's walk from our anchorage. The way led through a thickly-wooded country, but after a time we emerged into a plantation of cocoanut trees, the fruit of which forms the main product of the island, and shortly afterwards we reached the settlement—a group of wooden cottages thatched with leaves of the cocoanut palm.

The sea was dashing on the shore within a few yards of the village, behind which was a large mangrove swamp, where we discovered the nesting-place of the gannets. Their numbers were incalculable; thousands upon thousands were flying round overhead; streams of them were coming from the sea, and every tree was covered by them. Frigate birds were also very abundant, and they doubtless secured plenty of food, for the gannets were most cowardly; directly a frigate bird appeared they dropped the fish they were carrying and made off with harsh cries of alarm.

The breeding season appeared to be nearly over, and, as the night was fast approaching, it was necessary to obtain such specimens as we required without delay. At the first shot the air was filled with an immense number of birds, and their clamour as they whirled overhead was deafening.

The nests were mere collections of sticks in the branches of mangrove trees. A few of them

contained young birds covered with white down, but most of the young were flying overhead in company with their parents. After climbing up to several nests we succeeded in finding two eggs, which were of a white chalky texture. After obtaining as many birds as we required we started on our walk back to the ship.

Early next morning we landed again and walked towards the "gannetry." Our chief object was to get specimens of some of the land-birds. In this we were successful; amongst the number of small birds shot during the morning I obtained three specimens of a new species of warbler.* Most of the other land-birds we met with were similar to those found on Grand Cayman.

The only mammals we saw on the Cayman Islands were rats, which have been introduced, and one bat on Grand Cayman. Reptiles were equally scarce. A snake† was obtained on Grand Cayman, but was not seen on Little Cayman.

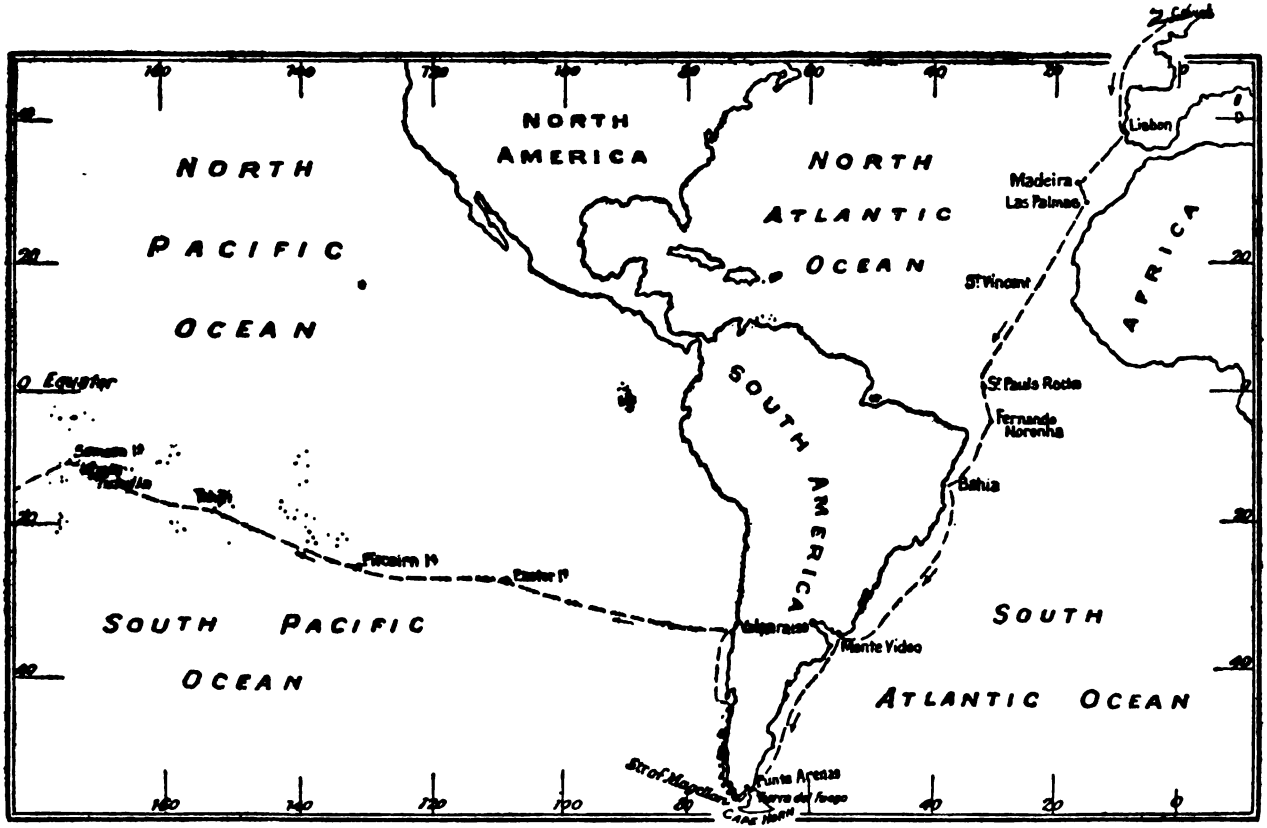
During the first night I spent some hours fishing from the deck of the yacht, and, although I caught nothing, I never remember seeing so many fishes together. The sea appeared to be full of them, and as they darted about they left flashing phosphorescent tracks behind them.

At midday we steamed away from Little Cayman, and shaped our course for Havana.

* *Dendræca crawfordi.* "Bull. B.O.C.," Vol. XIV., p. 95.

† *Dromicus anguliferi.*

A VOYAGE ROUND THE WORLD.



SKETCH-MAP TO SHOW THE COURSE OF THE FIRST PART OF THE VOYAGE ROUND THE WORLD.

CHAPTER XVII.

MONTE VIDEO AND THE STRAITS OF MAGELLAN.

DURING this voyage, on which we started on November 19th, 1902, we were unable, for various reasons, to visit the island of South Trinidad. After a stay at Bahia, we sailed for Monte Video and the Straits of Magellan.

On 9th January, 1903, in Latitude 24° 23′ 39″ S., Longitude 40° 1′ W., a number of the two species of Trinidad petrels, which I have described in a previous chapter, followed the ship for three days. At this time I was extremely anxious to get specimens of these birds, but, owing to the rough weather we were experiencing, it was impossible to lower a boat. Thus I was in the exasperating position of seeing within a few yards of the ship a quantity of birds quite unobtainable, of which very few specimens existed in collections, for these two species of petrel had hitherto been found only on the island of South Trinidad.*

Three days later, in Latitude 33° 29′ 33″ S.,

* Since the above was written a single specimen of *Œstrelata arminjoniana* has been obtained off the West Indies (*cf.* "Bull. B.O.C.," XIX., p. 98).

Longitude 50° 3′ 47″ W., the first albatros* was seen.

I may here mention that, though many attempts were made in the Atlantic, Pacific, and Indian Oceans, we never caught an albatros on a line. We subsequently came to the conclusion that they will not take a baited hook unless they are very badly in want of food. Possibly we were sailing at too great a speed, but a long line was used, and the bait was kept motionless on the water for as long a time as possible. When hove-to off Tristan da Cunha, Captain Caws and I spent hours "fishing" for sooty albatroses, but although several of these birds took the bait in their bills, they would not swallow, and usually dropped it immediately. This is, I know, not the experience that others have had with albatros "fishing," as several friends have since assured me that these birds are easily caught.

The next day the giant petrel† was seen. In size this fine bird equals several of the smaller species of albatroses, and when on the wing it much resembles the sooty albatros, but its yellow bill serves to distinguish it. Occasionally, almost entirely white examples of the giant petrel are met with, but we only once saw one. It is now, I believe, well known that the attacks which have often been reported as having been made by

* *Diomedea exulans.* † *Ossifraga gigantea.*

albatroses on sailors, who have fallen overboard, are in fact attributable to this species.

Early on the morning of 14th January we anchored off Monte Video. Owing to the shallow water the "Valhalla" had to lie about two miles distant from the town, and on account of this we made but one excursion into the country. Travelling by rail to the small town of Los Piedros, we walked into the country, which is mostly flat pasture land for miles round. Quantities of large blue-flowered thistles covered the country. An interesting account of these thistles is given by Darwin. He says:—"There is little good pasture, owing to the land being covered by beds either of an acrid clover or of the great thistle; in some parts they were as high as the horse's back, but in others they had not yet sprung up. When the thistles are full-grown, the great beds are impenetrable except by a few tracks, as intricate as those of a labyrinth. These are only known to the robbers, who in this season inhabit them, and sally forth at night to rob and cut throats with impunity. Upon asking at a house whether robbers were numerous, I was answered, 'The thistles are not yet up'—the meaning of which reply was not at first obvious."

During our stay here some time was devoted to fishing from the ship. Examples of two species were caught, one of which proved to be new to science, and has since been described under the

name *Corvina crawfordi*. This fish was exceedingly abundant, and we were much surprised to find that it had not previously been named.

On 20th January, having taken a pilot for the Straits of Magellan, we left Monte Video, but as the day advanced we had to drop anchor, owing to a very strong head wind, and for the remainder of that day and the next we lay to. From this time onward it became much colder, and we were glad to get into winter clothing. This, however, only applied to the temperature at sea—on land in the Straits of Magellan, the furthest south we reached, the air, although fresh, was certainly not colder than during a fine April in England.

On 22nd January the first diving petrels were met with. These curious little birds were continually rising under our bows, flying a few yards, and dropping suddenly into the sea, when they immediately dived. This diving petrel—*Pelecanoides urinatrix*—is exceedingly abundant throughout the whole of the waters of the Straits of Magellan. In appearance it reminds one forcibly of the little auk, being glossy black above and white below. The throat is speckled with grey, and a white band crosses the wings. The wings are very small and weak; the bird, doubtless, is losing the power of flight. A second species was met with a week or two later in the Bay of Valparaiso. This was *Pelecanoides garnoti*, which differs from the former species chiefly in being

larger and having a broader white bar on the wing.

In the Southern Indian Ocean a third species of this peculiar genus inhabits the coasts of the Crozette Islands, and extends to Kerguelen Land, while during the third voyage of "Valhalla," in 1905-6, we obtained specimens of a fourth and previously undescribed species at Tristan da Cunha.

Penguins* were also seen during the same day, as well as later, after we had entered the Straits. Most of those seen at sea were lying on their sides with one leg out of the water—a characteristic attitude of these birds as well as of other members of the genus, the nearly-allied *S. demursus* of South Africa and the adjacent islands being frequently seen in a similar position.

A few days later we shot a Magellan penguin for our collection. I shall not readily forget the great difficulty I had in skinning this bird. Between the skin and the flesh lay a mass of oily fat more than half-an-inch thick, in which were embedded the stiff quills of the breast feathers.

We afterwards found that just before the moult the Cape penguins,† coming up from the sea enveloped in fat, remain during the moulting season on shore, and never enter the water. As soon as the moult is finished they are quite thin, and then proceed to sea for a month before returning to breed.

* *Spheniscus magellanicus.* † *Spheniscus demursus.*

Later in the evening of this day we entered the Straits of Magellan, and after passing a jutting point of shingle, called Dungeness Point—a name which reminded us forcibly of home—we anchored in Possession Bay. Early next morning we weighed anchor, but, owing to a very strong head wind, we were not able to make any way, and were obliged to anchor again.

During the day two curiously-marked porpoises played round the ship; they were pure glossy white excepting the head, tail, and dorsal fin, which were black. Comparatively little is known of the porpoises and dolphins of the southern oceans, and these may very likely have belonged to some undescribed species, but all our attempts to harpoon them were unsuccessful.

At eight o'clock next morning, the wind having dropped, we started westwards and passed through the first "narrows." Three hours later we steamed close past St. Elizabeth and St. Magdalena Islands, formerly famous for the large number of kelp-geese which bred on them, and thence onward through the second "narrows." In these "narrows" enormous numbers of sea-birds—terns, skuas, albatroses, and diving petrels—were seen. Of these birds perhaps the most noteworthy was the skua,* as from this time until we reached Valparaiso this species was continually encountered.

The country, as seen from the ship, was, from

* *Megalestris chilensis.*

the east of the Straits to Punta Arenas, bare and sandy. Here in the desert were numbers of huanacos,* large parties of them were standing close to the shore. Unfortunately, we had no opportunities for landing, and had, therefore, to be content with a distant view of these animals.

As soon as Punta Arenas—the only town in the Straits of Magellan—is reached, the aspect of the land entirely changes; mountains and trees take the place of the desert, and on every side one gets the impression of fertility. The large trees, of which these forests are composed, are of two species: the deciduous Antarctic beech† and the evergreen beech,‡ the former being by far the more abundant.

While passing through the first "narrows" a fine, if distant, view was obtained of three condors,§ which were sailing, or rather circling, round a wall of rock close to the water. This was the only occasion on which we saw this magnificent bird, and from what we heard, I fear that it is not nearly so abundant as it was a few years ago, but what has caused the decrease it is difficult to say.

The steamer-duck‖ has also undoubtedly decreased in number of late years. It cannot now be called abundant—the description given by the

* *Llama huanacos.* † *Fagus antarcticus.* ‡ *F. betuloides.*
§ *Sarcorhamphus gryphus.* ‖ *Tachyeres cinereus.*

early voyagers—though many may still be seen throughout the western portion of Magellan Straits and in Smythe's Channel.

The condor may have been shot down by shepherds, of whom there are now numbers; but the decrease of the steamer-duck cannot be ascribed to human agency, as all the vast tract of country bordering the waters of Smythe's Channel, in which these birds are found, is practically uninhabited except by Fuegian Indians; and, although very few of these people were to be seen, we found no vestige of duck-remains either in their boats or in their deserted camps.

TIERRA-DEL-FUEGIANS ALONGSIDE THE "VALHALLA" IN SMYTHE'S CHANNEL.

CHAPTER XVIII.

PUNTA ARENAS, STRAITS OF MAGELLAN.

At mid-day we anchored off Punta Arenas, or Sandy Point, a town which is rapidly becoming of importance, not only because it is the only town in the Magellan Straits, but also because of the very large number of sheep raised in the immediate neighbourhood, from which a quantity of wool is shipped to England. I am indebted to Messrs. Jacomb, Son & Co., wool brokers, of London, for the following facts regarding the Punta Arenas wool clip.

"The wool is practically all from cross-bred sheep, varying in quality from fine half-bred to coarse Lincoln, the bulk being coarse. The quantity of wool exported to the United Kingdom is, roughly, from 30,000 to 40,000 bales yearly, and nearly all goes to London for sale. This wool shows yearly marked improvement, and is nearly equal to the best New Zealand clips. It is in good demand from buyers of all nationalities. After being sold by public auction, part of it is shipped to the United States of America,

Germany, France, etc., while rather more than half remains to be forwarded to English manufacturing centres."

The greater part of the country about Punta Arenas is covered with virgin forest, except certain large tracts which have been cleared for pasture land. Clearings are made by firing the trees, and during our stay there was a forest fire continually raging; indeed, it had been doing so, we were told, for more than a month, and its blaze on a windy night lit up the whole town magnificently for our view.

I walked through some of the cleared parts of this forest. The ground was covered with a thick, rich-looking grass, studded here and there with bushes of berberis. There appeared to be two, if not three, kinds of berberis in these Straits.

The most numerous species of birds about the town were a chat-like tyrant-bird,* the adult male of which is chestnut brown, with a black head and underparts, and a small kestrel. I also saw and obtained specimens of a bunting,† a flycatcher,‡ and a martin§; the last-named resembles our house-martin, except that it has no feathering on the tarsi or toes.‖

* *Centrites niger.* † *Zonotrichia canicapilla.*

‡ *Elainea albiceps.* § *Tachycineta meyeri.*

‖ I have frequently obtained in Sussex autumn specimens of our house-martin (*Chelidon urbica*) with these parts bare of feathers, but in these cases the feathers had doubtless been worn off.

One of my first excursions at Punta Arenas was a long walk on the shore towards a small iron lighthouse, which marks the eastern extremity of the point. Hundreds of terns,* the commonest sea-bird in this part of the Straits, were met with. A few siskins† were also seen; but the commonest land-bird was the above-mentioned *Centrites*, which was in great numbers, most of them being young birds.

Chilian skuas were chasing the terns. Several "quail-snipe"‡ were met with, feeding on a strip of grass close to the sea. This remarkable bird resembles a sandpiper in form, but it has a bill like that of a quail. A goose, probably the kelp-goose,§ and the southern black-backed gull were also noted.

In several shops in the town the skins both of mammals and of birds were exposed for sale. These skins were worthless as specimens, as in all cases the bones of the legs had been removed. Cormorants‖ and rheas¶ were shown, but the most interesting exhibit was a piece of skin of the extinct ground-sloth (*Mylodon*), a portion about four inches long and two inches broad, with much of the hair still attached. On enquiring the price I was asked £50. This piece of skin had been found with other remains in a cave, several

* *Sterna hirundinacea.*
† *Chrysomitris barbatus.*
‡ *Thinocorus rumicivorus.*
§ *Chloëphaga magellanica.*
‖ *Phalacrocorax atriceps.*
¶ *Rhea americana.*

miles east of Punta Arenas, and not far from the shore of the Straits.

This giant ground-sloth appears to have inhabited the shores of the Straits of Magellan, and quite recently it was believed that specimens were still living in Patagonia. This, however, is most unlikely, as the Patagonian natives live almost entirely on the money they obtain for the skins of the wild animals of the country, and they regularly bring their collections of skins to Punta Arenas for sale. If the *mylodon* were still in existence in a living state, these natives long ago would have been aware of the fact, and have brought in specimens for sale.

One afternoon the Governor, Captain Gomez, invited us to visit some coal mines which had just been opened, and we gladly availed ourselves of the opportunity. We travelled up to the mines, about five miles distant, in a light railway. The track was laid through a fine forest of Antarctic beech trees, and in a stream which ran through this forest several men were searching for gold. The coal mines were situated in the forest at an altitude of about 500 feet above the level of the sea. The mouth of the shaft was at the foot of a low cliff, and we went in on a truck, lying on our backs. It was a curious sensation, rushing down into the tunnel, which was on a slight slope. We soon came to the " working," where the coal was being hewn out and loaded into trucks. The

mine had but recently been opened, and the Governor could not say whether it would pay or not. The coal seemed remarkably brittle. Close to the entrance of the shaft I found a number of oysters embedded in the black clay, and succeeded in digging out a perfect specimen.

We afterwards spent a delightful hour in the forest. Birds were extremely scarce,* and we saw little else besides a small tree-creeper,† a bird afterwards met with in most of our anchorages in the Straits of Magellan and in Smythe's Channel. Although it has a tail composed of stiff feathers like our well-known creeper,‡ it does not seem to climb the trunks of trees like that bird: those we saw were hopping about the trees like tits. It is a familiar little bird, and follows one through the forest, continually uttering its shrill cry.

On 3rd February we left Punta Arenas, having been delayed for twenty-four hours, owing to a slight breakdown in the engine room, and proceeded westwards. At seven o'clock the same day we anchored in Port Gallant anchorage, about eighty miles from Punta Arenas.

Ships going through the Straits have to anchor every night, owing to the difficult and dangerous passages. All through the Straits and Smythe's

* Insects are less numerous in the country bordering the Straits than are birds, and during the whole passage through, the only insects I saw were a bee and two beetles.

† *Oxyurus spinicaudata.* ‡ *Certhia familiaris.*

Channel are natural harbours, where ships can anchor with safety. These anchorages were a great pleasure to all of us, for as soon as the ship came to one of them a boat was lowered, and we set off to visit some of the beautiful islets with which the Straits are studded.

In Port Gallant we had our first view of steamer-ducks. Seeing two ducks sitting on the water we steered towards them, when, to our delight, they "got up steam" and raced away. In different accounts we read of the various ways in which this duck is supposed to propel itself through the water. The older accounts say that it uses its "tiny wings as paddles" and "rows itself through the water." It was then called the "racehorse-duck." During our passage through the Straits we paid much attention to this subject, and came to the following conclusions:—when alarmed, steamer-ducks at once run away over the water, flapping their wings (which are not nearly so "tiny" as those of the Guillemot in proportion to the sizes of the birds), and travelling at an almost incredible speed—in fact, almost as fast as an ordinary duck can fly. The feet of the bird are large and strong, the muscles enormously developed. The wings, although not of sufficient size to raise the bird completely from the water, are able to lift the body clear of the surface, so that the feet come into play, when, by running on the water and flapping their wings, the birds race so fast

that a six-oared boat is never able to get within gunshot of them while they are moving.

It has been stated by some authors that the immature steamer-ducks are able to fly; again, others say that there are two species, one volant and the other flightless. Personally, I never saw one fly, though one of our party, Major Wilbraham, did see one rise from the water and fly away.

Of this bird Professor Cunningham writes *:—"It was first noted by Pedro Sarmiento, in 1582. Penethy, Byron, and Cook gave it the name of "racehorse-duck." Later, however, Captain King† changed this name to that of steamer-duck. He also observed that certain of these ducks had volant powers, and thought that he distinguished two species, recognisable both by size and plumage—the flying birds he called *patachonicus*, the non-volant birds *brachypterus*." Professor Cunningham further states his belief that there is but one species, and that the volant birds are immature examples, as all the flying birds that he examined anatomically showed signs of incomplete ossification of their bones.

All the examples we obtained, and all those I have examined in the British Museum, undoubtedly belong to one species only; and if I may venture to give an opinion, I should say that Professor Cunningham's is undoubtedly the right

* Transactions of the Zoological Society of London.

† Proceedings of the Zoological Society of London, 1830-1, p. 15.

solution, as it would surely be an almost unprecedented thing to find two very nearly allied species living together, one able to fly and the other unable to do so. At the same time, it is somewhat remarkable that, although we saw examples of this duck of all ages and in all stages of development, we met with but one which was able to fly. It may be that this species is gradually becoming entirely flightless, and that the volant individuals met with are survivals of a former stage in a state of transition, and have not as yet lost the full power of flight.

A fine pair of adult steamer-ducks which we obtained, weighed respectively 9½ and 10 pounds (a young bird with downy wings was only 5 pounds in weight). I, therefore, cannot believe that this species can ever weigh, as has been stated, as much as 20 pounds. The gizzards of all those examined by us contained broken fragments of the shells of mussels.*

In Port Gallant anchorage we saw a large flock of surface-feeding ducks, but were unable to obtain specimens. Some dotterel†—a southern representative of the bird which nests now so rarely on the hills of the north of England and Scotland—were feeding on the edge of a large fresh-water lagoon, and I shot two young examples. A blackbird‡ was also obtained—a bird in first plumage,

* *Mytilus magellanicus.* † *Eudromias modesta.*
‡ *Turdus magellanicus.*

in which state it much resembles the young of our blackbird, except that it has a black cap. This bird was met with frequently later on in Smythe's Channel, and was, in fact, one of the few land-birds seen there. Its melancholy whistle was to be heard continually ringing out over the otherwise silent fjords towards sunset.

At daybreak the next morning we left Port Gallant, and, proceeding westwards, anchored towards evening at Churruca Bay, which is the most western anchorage in the Straits of Magellan. This place is one of the most beautiful that it has ever been my good fortune to see. Towering peaks, covered from summit to base with impenetrable beech forests, almost encircled the deeply indented bay, the water of which was inky black, and the surface smooth as glass. Here and there were little islets, some fringed with a tall white-flowered plant; others surrounded with hedges of fuchsias in full flower. Flock after flock of Magellan cormorants flew by us, their white breasts flashing bright against the dark water of the bay, while steamer-ducks scudded to right and left, as we glided to our anchorage in the glorious natural harbour.

As soon as the anchor was down we had two boats lowered. A long chase after steamer-ducks proved unsuccessful. The birds dived at the least alarm, to reappear far out of shot, and escaped over the water with their curious flapping "run."

On one island the remains of an encampment of Fuegian Indians was seen; this consisted of a few "wigwams" built up with branches, and outside them a large heap of mussel shells—of natives there was no sign.

Afterwards, when we were under steam, the people themselves brought their canoes alongside, but when we were on land they kept out of our way, disappearing in a wonderful fashion. Major Wilbraham one day saw a canoe-load of them land in one of these harbours, and, wishing to try to converse with them, he steered his boat for the same place. When he arrived, however, he found that people, canoe, and all had vanished into the forest, and by no amount of searching could he find any trace of them.

The food of these people is composed almost entirely of mussels, which are very plentiful in all these waters.

CHAPTER XIX.

SMYTHE'S CHANNEL—GULF OF PENAS—VALPARAISO.

EARLY on the morning of 5th February we left Churruca Bay and entered Smythe's Channel. The scenery in this channel is even more beautiful than that of the Straits of Magellan. Mountains, covered with primeval forest, tower high on both sides, while the water, smooth and of an inky blackness, is dotted with islands of all sizes. Unfortunately, these splendours cannot be seen to advantage, on account of the execrable climate of this part of the world. All the winter it is said to be snowing continually, and during the five days we spent in the channel it rained continuously, while a perpetual mist veiled the snow-topped peaks.

To wander through the dripping forests was not pleasant. At the best of times they are almost impenetrable, owing to the thick vegetation, but when at every step one was met with a shower of water falling from the trees and bushes, the discomfort was great.

Soon after midday, a boat-load of Fuegians

appeared in front of us, and as the ship was slowed down, they came alongside, and after a little persuasion came on board. They soon made friends with the crew, and the pilot, who knew their language, talked to them. They at once began to bargain for biscuits, etc. All they had to offer in exchange were the well-worn otter skins with which they were clothed. They readily divested themselves of these and implored us to give them biscuits, tobacco, and matches: the latter they seemed to understand perfectly. We, of course, gave them a plentiful supply, and they went away quite happy.

It appears that whole families travel about in one canoe, in which they go from island to island in the channel. In the canoe a fire is kept continually burning, and if this should go out, these poor people are in a bad way, as, owing to the dampness of the wood, it is almost, if not quite, impossible to kindle fire by friction.

Owing to the greatly reduced number of these natives, Tierra del Fuego, which was so named on account of their custom of signalling by fire, can hardly now be said to be appropriately named.

The same evening we anchored in Port Dixon, where the night was spent, and sailing at daylight next morning we arrived towards evening in Puerto Bueno harbour. Here we visited a large fresh-water lake, which our pilot assured us was a

" fine place for ducks." A fine place it undoubtedly is, but as for ducks, there were none. In no place have I been more struck with the entire absence of life than in the immediate surroundings of this lake. Although the country appeared to be perfectly suited to birds and animals, the only living creatures we saw were a single bird, a creeper of the species I have previously described, and one small toad,* found on the margin of the lake: this was in an immature state, black, striped with yellow.

After leaving the lake we took to the boats again and landed on a small island. On the rocky shore some oyster-catchers were feeding, but they were extremely shy, and we were unable to get within shot of them. A tiny humming-bird was fairly numerous, and several were seen perched on the bare tree-tops. At least two species of humming-birds have been recorded from the Straits of Magellan, but I was unable to identify the examples we saw, as no specimens were obtained. It seemed strange to meet with humming-birds on the chilly coasts of the Magellan Straits: one always associates them with the tropical portions of America.

We also saw and shot a large rail,† which in size and colouring resembles our moorhen, but has a long curved bill somewhat like that of a curlew in shape, but on a much smaller scale. It is only

* *Nannophryne variegata.* † *Rallus vigilantis.*

found on the shores of the Straits of Magellan and Smythe's Channel, and is somewhat rare in collections.

A fine male kelp-goose was seen on this island. This species — *Chloëphaga magellanica* — is remarkable in that the males are white while the females are grey, banded with black. The Governor of Punta Arenas gave us two little goslings of this goose, but they died as soon as we got into a warmer latitude.

On the rocks which border the shore, in most of the anchorages in Smythe's Channel, an interesting bird—the *Cinclodes patagonicus*—was seen and obtained. It is somewhat like a dipper in action, as it runs over the rocks searching for insects. On several occasions one of these birds came into the boat as we were rowing about the harbour, and showed little fear, remaining perched on the side of the boat for a minute or more.

When we reached the ship at dusk, wet through with the continuous rain, we heard that a canoe-load of Indians had been to pay a visit during our absence.

The following day we reached Molineux Sound, and after we had anchored, the rain ceased, the sun appeared, and we much enjoyed the first fine afternoon we had experienced since leaving Punta Arenas.

Molineux Sound differs somewhat from the other anchorages we visited, the country being

much more open, less wooded, and not nearly so mountainous. One small valley in the immediate vicinity of the harbour was occupied by a chain of reed-girt lakes, rising one above the other like a series of lochs. On each side of the valley the gentle slopes of the hills were covered with shrubs and low beech trees.

Though this appeared to be an ideal place for land-birds, we met with very few, and these were of two species only—a large hawk,* and a pair of the Magellan thrushes. The scarcity of animal life on the shores of Smythe's Channel has been previously mentioned by Captain Macfarlane.† Sea-birds were, however, fairly numerous, cormorants being the most abundant, though steamer-ducks were not uncommon. We here saw a brood of downy ducklings of this species, which, though apparently not many days old, scudded away over the water at such speed that, although my boat was rowed by six men, we were unable with all our exertions to get within shot. The ducklings were accompanied by their parents, which swam round the boat, quacking in alarm, but they kept well out of shot, and only occasionally showed themselves above the water. Most of the time during which they were submerged their bills were visible above the surface of the water.

The steamer-ducks appear always to frequent

* *Milvago chimango.* † *Cf.* "Ibis," 1887, p. 201.

the growth of kelp-weed, which grows in profusion round the rocky islets in the Straits of Magellan and Smythe's Channel. Amongst this weed they obtain their food, which consists entirely of mussels of two species.* Some of these mussels grow to a large size, and we frequently found shells measuring up to six inches in length.

In Molineux Sound two examples of the diving petrel were obtained. Other petrels are strong-flying ocean birds, but this species trusts entirely to its diving powers for means of escape when pursued. Its flight is weak and short: the bird soon drops back to the water and at once dives. When skinning this bird, one cannot fail to be struck by the curious formation of the gizzard, which is soft and flabby, and is, in fact, merely an enlargement of the proventriculus. All those I examined were crammed with small fishes.

In each anchorage throughout these channels a trammel net was set, and in most of the harbours we had good catches of fish. By far the most numerous appeared to be a species of grey mullet. Small sharks were also caught and preserved, while one specimen of *Aphrites gobio* was obtained and brought home in spirits. This fish has an enormous head, out of all proportion to its small body. In the Straits of Magellan some large spider-crabs were caught, several of which were as much

* *Mytilus magellanicus* and *M. patagonicus*.

as two feet across from claw to claw. These crabs are excellent eating, being far superior to any lobster we had ever tasted.

On 8th February we left Molineux Sound. During that morning two canoe-loads of Indians came alongside. In one of these I saw the head of a deer, which I bought for three biscuits. It proved to be the head of a "huemule," and, although too decomposed to skin, I managed to save its skull, but this was washed overboard during the fearful weather we encountered in the Gulf of Peñas. After a little persuasion the natives came aboard. They were wretched-looking creatures, little more than four feet ten inches in height, with long straight black hair, cut square across the forehead, while their faces were almost repulsive, and their otter-skin clothing was worn and scanty.

Through our pilot I learned that they had caught the "huemule" with the aid of their dogs —fearful looking mongrels—which they had in the boat with them. Before they left these strange people completely divested themselves of their otter-skin clothes, which they presented to Captain Caws; then, caring nothing for the most inclement weather, they cast off the leather thong which held their boat to the gangway of the ship, and rowed away, naked, to the shore. It was thus that we saw the last of these Indians, the extermination of whom is but a matter of a short time.

We were informed* that they are annually carried off in numbers to a large missionary station not far from Punta Arenas, where they soon die from the effects of civilization. Every year, we heard, they become fewer and fewer, and there can be no doubt that in a comparatively short time the natives of Tierra del Fuego will be a race of the past.

An hour later we passed Eyre Sound, and afterwards for several miles the water of the channel was full of broken ice, which had originated from a neighbouring glacier. This was our only experience of steaming through ice. The ship was obliged to proceed at "dead slow," and, for several hours, blocks of ice of various sizes were grinding and crashing against our bows. Many of these miniature icebergs contained rocks and masses of earth, while, during our passage through them, many streaks of paint from the ship's side were left on their surfaces.

Looking up Eyre Sound we had a splendid view of a glacier—a mass of ice and snow, extending upwards for several thousands of feet. Late on the same afternoon we entered water free of ice, and, towards sunset, anchored in Eden Harbour.

The weather, as usual, was wet, and a thick mist hung over the mountains. We rowed up the harbour to the mouth of a small river. Here

* This information was given us by our pilot, a man who had spent many years in these waters, and whose information always proved reliable.

geese were more plentiful than in the other anchorages visited. I saw but one species—*Chloëphaga poliocephala*—which is one of the most handsome geese in the world. It is about the size of the well-known Egyptian goose, and somewhat resembles it in the coloration of its upperparts; the underparts are white, barred on the flanks with black, and the breast is encircled by a broad band of bright chestnut-red. In this harbour we met with another kind of cormorant—*Phalacrocorax vigua*—which is, I believe, the species found so abundantly in the roadstead at Monte Video. This being so, it is rather remarkable that we did not meet with it in the Straits of Magellan.

In Eden Harbour we saw a steamer lying on the rocks, and were told by our pilot that it had been wrecked a few months previously. In many parts of Smythe's Channel we saw such wrecks, and I believe that in few parts of the world is navigation so difficult and dangerous as in these waters; there are so many offshoots from the main—and only navigable—channel, that it is necessary to know the passage very well to get through with safety. Fortunately, both the Straits and Smythe's Channel are well provided with natural harbours, where ships can anchor with perfect safety.

In nearly all these harbours there are numbers of boards, on which are painted the names of the

ships which have anchored there, nailed to the trees near the shore, thus completely disfiguring the beauty of nature.

In many parts of Smythe's Channel otters* were met with. These animals nearly always sink when shot, and we had some difficulty in obtaining the single specimen which we brought home. They were usually seen in parties of three or four, swimming about among the kelp-weed close to the shore. In this thick growth of weed it was not so difficult to retrieve them when shot, as the strands of kelp prevented them sinking before the boat's arrival. Superficially, this animal is much like our well-known otter, but the fur is perhaps slightly darker in colour, and rather thicker. Several of the parties of Indians we met with in this channel had the remains of otters in their boats, and the whole of their clothing seems to consist of the skins of this animal. How they kill them I do not know, but it may be that their dogs catch them. I saw no arrows or any other weapons in their canoes. The Patagonian natives use bow and arrow to obtain their skins, but, from all accounts, they appear to be more of a hunting race than the Fuegians.

On the morning of 9th February, we passed through the "English narrows." This is the most difficult part of the channel, as there is only

* *Lutra patachonica.*

GRAY'S HARBOUR, STRAITS OF MAGELLAN.

room for one ship to go through at a time, and the current is so strong that it is necessary to proceed at full speed. Blowing our steam whistle, to warn any ship that might be coming in an opposite direction, we steamed through. On either side of us the mountains towered so high and so close that one almost imagined they were within a stone's throw. Exactly in the centre of the narrows there lay the remains of a steamer which had been wrecked some time before, and we seemed to be carried straight for this by the current, but when close to it we swept aside and steamed safely through.

Early in the afternoon we anchored in Gray's Harbour, our last anchorage in Smythe's Channel, and here a most delightful afternoon was spent. Birds were more abundant, and examples of several species were shot. A grebe,* much resembling our little grebe, or "dabchick," in appearance, was shot by Lord Crawford. This was the only time we saw a grebe in either the Straits of Magellan or Smythe's Channel. Cormorants of the three species mentioned previously were seen in large numbers. Steamer-ducks were also fairly common, and one, the finest we had yet shot, was obtained by Lord Crawford. I landed alone on a projecting arm of the harbour, and forced my way through the forest. The undergrowth was composed entirely of prickly

* *Podiceps americanus.*

berberis bushes, while the ground was strewn with the rotting remains of fallen trees, which, from their appearance, had probably lain there for many years. Without having experienced it, I should not have realized how difficult it was to walk—even a few yards—through the undergrowth. I was considerably surprised when, as I stepped on an apparently sound tree which had fallen across the path, the whole tree-trunk, as well as the ground beneath it, crumbled away. The next minute I was buried up to the waist in decaying wood. This happened very frequently, so that great care had to be taken to avoid a serious accident.

While extricating myself from one of these rotten tree-trunks, I suddenly saw in front of me a bird* which I had not hitherto met with. In appearance it somewhat resembled a wren with an enormously long tail. It was too close to shoot with a large-bore gun, such as I was armed with, and, in spite of all that I could do to frighten it away to a reasonable distance, it refused to move. All my attempts to secure it were unsuccessful, and I was obliged to leave the place without obtaining it. I was very anxious to get a specimen, as the bird is rare in collections, so I went back to the ship for a small-bore gun, and was successful in finding and shooting another of these birds, only to see it fall amongst dense bushes and decayed wood, in which it was utterly lost.

* *Sylviorthorhynchus desmursi.*

Early the next morning we sailed from Gray's Harbour, and emerging from the smooth waters of Smythe's Channel we entered the stormy seas of the Gulf of Peñas. A gale was blowing in our teeth, and although going at full speed for twenty-four hours we covered a distance of only fifteen miles. All night long the screw was racing, and the water was breaking over the bows of the ship—a most unpleasant change from the smooth and easy passages we had enjoyed previously. Skinning birds I found to be quite impossible, owing to the pitching of the ship, and, although a good sailor, I have never experienced a more uncomfortable time. During this gale albatroses were sailing over the stern of the ship, their wings spread and almost motionless against the wind.

Soon after midday on 14th February the coast of Chile was sighted, and during the afternoon we entered the Bay of Valparaiso. The surroundings of Valparaiso, as seen from the harbour, are bare and desolate in the extreme. There is little vegetation, and the whole country has a dry and barren appearance. Far away in the distance we could see the outline of the Andes.

Most of my time here was spent in cruising about in the bay, in our steam launch, in quest of sea-birds. Land-birds are scarce, owing to the fact that they are shot by the Chilians for food. Sea-birds are far more numerous, and in the bay we met with several interesting species. Perhaps

the most striking was a pelican,* which was in numbers amongst the shipping in the harbour, where it was quite tame and allowed of a near approach. The fact that it is plentiful and tame in the harbour may be accredited to protection by law. Outside the harbour we found it very shy and wary, and for some days we tried in vain to shoot one for the collection. Gulls, terns, and petrels were also very numerous in the bay.

The very handsome Franklin's gull,† in general appearance much resembling our well-known black-headed gull, and having the whole of the underparts of a beautiful rosy pink,‡ was numerous in the harbour. This pink colour, which is also found on the feathers of the underparts of many other gulls and terns, does not show in dried skins. I pulled several feathers from the breast of one of the gulls and placed them in an envelope, which was at once put inside a book, but in spite of these precautions I found that after a week the feathers had turned quite white—a fact which shows that the disappearance of the pink colour is not due to fading from exposure to the light.

On the day of our arrival we saw large flocks of grey phalaropes sitting on the smooth waters of the bay. Later on, when cruising about

* *Pelecanus thagus.* † *Larus franklini.*

‡ Very old examples of our *Larus ridibundus* have the breast suffused with pink after the spring moult.

GRAY'S HARBOUR, STRAITS OF MAGELLAN.

in the launch some miles from the shipping, I met with small parties of these birds, and one specimen was obtained. The bird breeds in the high north, and occurs in England on "passage" during its migrations, which extend as far south as Chile and New Zealand.

Richardson's skua, another sea-bird well known off English coasts, was also obtained at Valparaiso. We were somewhat surprised to see this species so far south, as it had not previously been recorded from this latitude. It varies considerably in coloration, some examples being dark chocolate-brown on the breast, while others are white. A specimen of the latter "phase" was shot.

Every evening great numbers of petrels of two species came in close to the shipping. The more common was a dark brown bird, and this proved to be *Puffinus griseus*, which is an occasional visitor to England; the other was *Puffinus creatopus*, a somewhat rare bird. The former was seen every evening in vast numbers—in fact, so many came into the bay of an evening that the water was literally black with them.

A few giant petrels were noticed, and they deserve special mention, owing to the fact that they are one of the most voracious of sea-birds; nothing seems to come amiss to them in the way of food. The example we shot was feeding greedily on a dog, long dead! As we had not previously obtained a specimen of the bird, it was

taken on board and skinned. I shall not easily forget it, not only on account of its fearful stench, which seemed to penetrate to all corners of the yacht, but also because of the remarks of my companions, which were scarcely complimentary, either to me or to my "specimen."

Round about the shipping were numbers of fishes, and it was a most interesting sight to see the pelicans feeding on them. All day these huge birds remained perched on the buoys, but towards evening they flew round the harbour in search of food. They would fly in circles round a shoal of small fishes, and every now and then one would suddenly close its wings and plunge head foremost into the water. As soon as it appeared on the surface again, the pouch under the bill was seen to be enormously extended with fish, which were then swallowed in a somewhat leisurely manner. Frequently, however, a black-backed gull* appeared on the scene, and, settling on the pelican's head, endeavoured to extract the fish from its mouth. We could not be certain if the gull ever succeeded in stealing anything in this manner, but from the frequent attacks of this kind made by the gulls, there can be little doubt that they often succeed in robbing the larger bird of its prey. The pelicans, however, did not seem to resent this treatment in the least.

At length, after several unavoidable delays,

* *Larus dominicanus.*

we left Valparaiso, and, falling in with a local "trade wind," we got under sail, and proceeded westwards, bound for the South Sea Islands.

CHAPTER XX.

EASTER ISLAND.

FOURTEEN DAYS after leaving Valparaiso, Easter Island, the "Mystery of the Pacific," was sighted.

Easter Island is 2300 miles west of Chile, and, though it is comparatively well-known by repute on account of the huge images, hewn out of lava, that are to be found in many parts of the island, especially near the sea shore, it has been very seldom visited.

When first discovered by Roggewein, a Dutch captain, on Easter day, 1721, it was uninhabited, but the island is now used as a sheep and cattle run, and belongs to a Chilian company. During his second voyage Cook estimated the number of inhabitants as 700, but this was evidently an under-estimate, as in 1860 they numbered 3000. Three years later the depredations of slavers had reduced the population to one-half, and later an epidemic of measles wrought further havoc, so that by 1868 only some 900 inhabitants remained. In 1872 there were only 295, and ten years later only

HUMAN SKULLS FROM EASTER ISLAND.

150, while at the time of our visit the population was not more than 100.

When we arrived the weather was rough, and we were unable to lower a boat, and but for the fact that Lord Crawford had taken the mails from Valparaiso for the inhabitants, we should no doubt have sailed away without landing. Fortunately, however, the people on shore saw the yacht, and sent a surf-boat out to us, and by this means we were able to go ashore.

We were only there a very short time, and in consequence were unable to see many of the interesting caves and carvings which abound on the island; and this was especially unfortunate, as practically nothing is known of the former inhabitants, while the fauna and flora, such as they are, have never been collected.

There are now, I believe, two Easter Island images in the British Museum. The images, we judged, are on an average at least twenty feet in height, while some of them are probably considerably more. They have been hewn out of the lava in one or more of the craters on the island. In one of the smaller of these craters, Major Wilbraham saw several statues in an unfinished condition, the features being carved on the surface of the lava. It would seem, therefore, that the outline of the statue was first carved, and that the block of lava was afterwards cut out and carried by some unknown means

down to the coast, where it was set upright, facing the sea.

Apparently all these images are alike in general appearance. The carving is rough: it represents a human face with a very large and prominent

FIG. 1.—Lava Image.

nose, a rather protruding mouth, a pointed chin, the forehead narrow, and the brows beetling. (Fig. 1.)

Each statue is mounted on a platform of loose blocks of lava, and these platforms seem to be ancient burial-places. All the stones with

which the platforms are built are of the size of a man's head, perhaps slightly larger, and they are arranged in the form of a rough square of about the dimensions of an ordinary dinner-table; in the centre of each platform there is a hollow space.

Soon after we first landed, one of the party noticed a fragment of a human skull lying near one of the statues, and, on enquiry, we were told that the skull had come from one of the platforms. Our informant added that there were human remains in all the piles of rocks at the foot of the images, and that, if we liked, he would tell the rest of the natives to collect a quantity of bones for us. This same man—a native of Tahiti, who had been on Easter Island for several years—told us emphatically that the bones were on the island when the present inhabitants first arrived there from Tahiti.

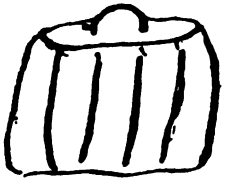


FIG. 2.—Lava crown for statue.

We, of course, accepted his offer, and, on our return to the landing-place a few hours afterwards, we found a large stack of bones awaiting us. We ourselves examined several of the platforms, and in each one there were remains of human skeletons. Some were complete, and some consisted only of a few small bones, such as vertebræ or ribs. Many of the bones were in good condition,

but others were much decayed, and showed signs of having lain in these graves for a very great length of time.

So far as we could discover, only one body was buried in each platform. The body seemed to have been placed in its grave in no special position —at least, the bones were all together in a pile, though possibly the body may have been placed in a crouching position, a supposition borne out to a certain extent by the fact that the spaces in the platforms were of no great size.

All the bones collected were carefully packed and taken on board, and are now in the British Museum. Mr. T. A. Joyce has examined this collection and has most kindly placed his notes on the subject at my disposal. I have made several extracts from them and owing to his courtesy am able to give a fuller account of all that is known of this interesting island than would otherwise have been possible. A series of forty-nine skulls was brought from Easter Island by Capt.-Lieutenant Geiseler, after the visit of the German gunboat "Hyäne" to the island. Geiseler obtained several of the skulls himself either from the "platforms" or from specially built mortuary chambers. He stated that the "platforms" were used by the present inhabitants as burial places, and adds that this practice was in vogue at the time of his visit; and that the natives were in the habit of removing the bones as the bodies decayed

to make room for further burials, leaving only the skulls. It seems strange, therefore, that the natives should have told us that the bones were there before the island became re-inhabited; also that we should have found but one skull in each "platform."

After a careful examination of the skulls brought back by us, Mr. Joyce finds in them distinct evidences of a Melanesian type, and he naturally describes this as a most surprising find in an island so far removed from Melanesia; his words are, "and considering the remoteness of Easter Island from Melanesia of the present day, this fact in itself is sufficiently puzzling and interesting."

We were informed by the overseer of the island that the present inhabitants were imported from Tahiti,* and if this be the case it is difficult to account for the presence of Melanesian types in the skulls found on the island, unless, indeed, many of these skulls are really those belonging to the former inhabitants.

The huge images set up on a platform of stones, arranged so as to form a covered chamber or vault, seem to point to these having been intended to mark a burial place. In fact, it is difficult to imagine for what other purpose they were erected.

The portions of skulls from which the accom-

* The present inhabitants are in appearance pure-bred Polynesians and possess the handsome features of the Tahitians.

panying photograph was taken are in my possession and are crumbling with age.

Caves were seen and the stone houses examined, during our visit, by Major Wilbraham, who has kindly supplied me with the following short description of them, and the carvings they contain. It is much to be regretted that, owing to the short time available, Major Wilbraham did not have sufficient opportunity to make an even more thorough examination. In company with Doctor Macdonald he spent a night ashore, as guest of the overseer, Mr. Cooper, and the following are extracts from his journal :—

"*March* 13*th*.—Macdonald and I got up early and rode to the top of the crater, which is called on the map Rano Kao. This is perfectly circular,

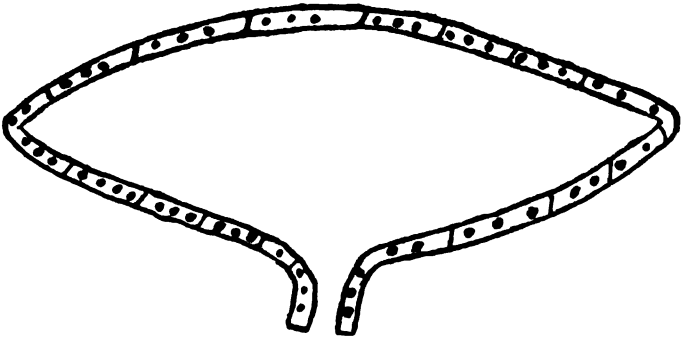


FIG. 3.—Plan of stone house at the lip of the crater of Rano Kao.

seven hundred feet deep, and two and a half miles round, while the bottom is covered by a marsh. Part of the way down the crater are a series of cliffs

each of which has a cave-dwelling entrance, but we had no time to examine these.

"We rode to the south-west or sea-side of the crater, where the lip was broken away into the sea, and looks on three rocky islets.

"There are just on the lip a number of low stone houses facing the sea. In plan they are narrow ellipses (Fig. 3), the walls and roofs being built of shallow, undressed slabs. The doorways are very narrow and low. The floors are clay, but as there is at present only about four feet headroom, they were probably once lower. I found an oval smooth stone, about ten inches long, with a scratched device (Fig. 4). The rough boulders outside were covered with figures not ungraceful, generally a female form in a curved position,

FIG. 4.—Carved stone.

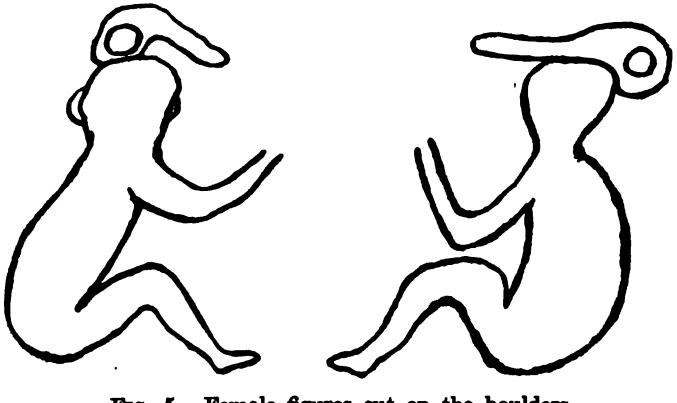


FIG. 5.—Female figures cut on the boulders.

sometimes with a sort of chignon, decorated with two long feathers pointing forwards. This figure was sometimes doubled, and a particularly fine one was inside one of the houses (Fig. 5). Odd

FIG. 6.—Designs carved in the rock outside the houses at the lip of the crater.

corners of the rock were filled up with these designs (Fig. 6). There was also a block with a rather deeply carved sort of owl's face inside one house. Outside one house were the deep marks of tool grinding.

"Some houses had two entrances on the same side, and sometimes a middle partition. I found

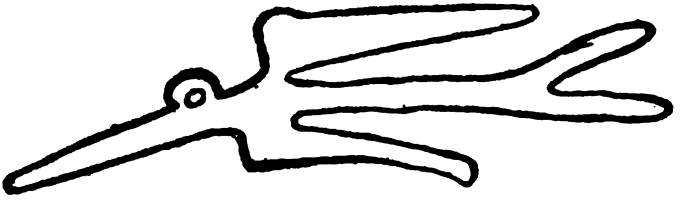


FIG. 7.—A painting in a cave of a frigate bird.

no implements, but had no means of digging. I saw a few obsidian chips, and have no doubt there is much to find here.

"Mr. Cooper gave me a broken stone fish-hook and an old wooden idol.

"We rode down to a cave by the sea on the west side, called in the map 'Hangaroa.' There were many paintings in red and white and black, principally frigate birds (Fig. 7), and a man-of-war with white portholes, and another square-sailed ship. These do not appear to be of great antiquity.

"In the village I got some rough obsidian spear-heads and a large stone adze.

"Mr. Cooper tells me that there are, in other parts of the island, inscriptions in stone, but we saw none; he describes them as like 'Japanese

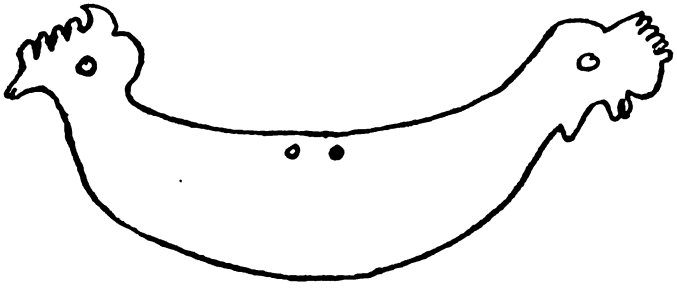


FIG. 8.—Wooden "charm." Worn, perhaps, on the heart.

writing.'* The more modern idols are of the type of the statues, with a broad nose with narrow bridge. The old wooden idol (mentioned above) is quite different, with high cheek bones and a 'Wellington' nose."

There is evidently much of great interest to

* The Easter Islanders alone of all the inhabitants of Oceanea and South America possessed a written language. Wooden tablets, on which the script has survived, are described by Mr. O. M. Dalton, *cf.* "Man," 1904—I.

be found on Easter Island, and it would well repay the trouble and expense of a thorough investigation; but, if anything is going to be done it must be done soon. Every year makes a great difference to the state of the carvings and caves, as the latter are now much used as shelters for sheep, and in a comparatively short time all traces of any carvings will be worn away by the frequent passing to and fro of these animals.

It would not be so very difficult for an expedition to visit the island, for at least once every month a schooner or a small steamer leaves Valparaiso and calls there, and I have no doubt that one could easily reach it by these means.

The whole of my time during our short visit was spent in collecting specimens of natural history, and I had no opportunity of visiting the caves and stone houses. Birds and insects were very scarce—in fact, I have never seen an island of the size of Easter Island inhabited by so few birds.

There is apparently but one species of indigenous land-bird. This bird I did not meet with, but it was described to me by Dr. Macdonald, who saw a single example near the settlement, as being somewhat like a reed-bunting but with a red breast. I believe this to be an undescribed species, and it is unfortunate that no specimen was procured.

There is a tinamou, a bird much resembling a partridge, but this has been introduced from South America. Two of these birds, which were shot and skinned, proved to belong to a common species of tinamou, known as *Nothoprocta perdicaria*. Sea-birds were rather more numerous, but these were mostly seen from the ship before we landed. On the island itself I saw but two species, the common noddy tern, the same bird as that found on Saint Paul's Rocks, and white terns.* The latter were seen in the crater of Rano Kao, where they were apparently nesting.

In a marsh at the bottom of the crater were numbers of small geese, which were seen both by myself and Major Wilbraham. These geese may have been introduced, but as none of us had time to get to the bottom of the crater, no specimens were procured. In coloration they appeared to belong to two species; some being black with a patch of white on the wing, while others were of a red colour. These differences may, however, be due to sex. A golden plover was, we were told, introduced by Mr. Cooper, who, several years ago, turned out six of these birds on the island.

There are no indigenous mammals on Easter Island, the rat which inhabits it having been imported, and a cat, which is found wild, being descended from the domestic cat.

On the second day of our visit I landed early

* *Gygis alba.*

in the morning, and set off in the direction of the crater. After a long walk I eventually reached the lip of this volcano, but, owing to lack of time, I was unable to get to the marsh at the bottom of it. I scrambled about half-way down to pick up a tern which I had shot, but at this point it was extremely difficult to descend, owing to the nature of the ground, which was covered with loose stones and *débris*. I obtained a glimpse of the geese, and had a good view of the marsh about a thousand feet below me.

Easter Island is now almost entirely covered with grass, and, from the sea, presents an unbroken view of rolling grass-covered country. A closer inspection shows that amongst the grass lie innumerable rocks of lava of various sizes, and were it not for the number of sheep-tracks in all directions, it would be a tedious matter to walk any distance in many parts of the island.

A few low trees have been planted amongst the houses at the settlement, and at the bottom of the crater I noticed some small trees and bushes. In former times there were many trees, but all appear to have been felled, and the land cleared to make grazing ground for sheep and cattle.

At the time of our visit there were 40,000 sheep. They were very small, and their wool was of a yellowish colour, doubtless discoloured by the earth. All the wool is shipped to Valparaiso, whence it goes to Bradford, in Yorkshire.

Two sheep and a bullock were required for the ship, and we watched the natives catching them. The sheep were easily ridden down by a couple of men on horseback, and were at once slaughtered.

A bullock was then singled out and separated from the herd by the two mounted natives. Each man was armed with a strong lasso made of raw hide, the end of which was fastened to the saddle of his horse. As soon as the bullock was cut off from its companions it was headed for the shore. Driven frantic by the cries of its pursuers it charged straight for us, and we had barely time to scramble out of the way before it was galloping over the spot where we had been sitting. Then brought to a standstill by a low cliff, it was most skilfully lassoed by one of the horsemen, who, from a distance of some twenty yards, threw his thong in such a way that the running noose fell over the horns of the bullock and at once drew tight. The second native then cast his lasso over the beast's hindquarters, the lower end of the loop lying on the grass just behind its hind feet. The other native then rode to the front making the bullock step backwards and thus stand within the circle of the lasso which was at once pulled tight, so that the poor beast fell heavily to the ground. It was then dispatched by a knife thrust in the throat.

I was indeed sorry when we sailed away from Easter Island after so short a stay. I had been

able to spend only some six hours on shore, and the greater part of that time was taken up in walking from the landing-place to the crater, a distance of something over three miles along an exceedingly rough track.

In a voyage of this kind, however, it is impossible to do so much as was originally intended, owing to delays which are always experienced in ports. For instance, we were delayed for various reasons at Bahia for two weeks, and the same length of time at Valparaiso, where the ship was dry-docked, owing to an injury to the propeller, sustained while steaming through the ice in Smythe's Channel.

In such ways as these, days were lost in places of little interest compared to that of Easter Island and Pitcairn. The whole of this voyage occupied nine months only, and so we were forced to be content with extremely short stays at many of the islands, while visits to others, such as South Trinidad and the Marquesas, had to be abandoned altogether.

CHAPTER XXI.

PITCAIRN ISLAND.

At six o'clock on the morning of March 22nd, 1903, we sighted Pitcairn. The history of this island and its people is well-known, but a brief account here of the origin of the inhabitants may not be out of place.

At the time of its discovery Pitcairn was uninhabited, but afterwards it became the home of some of the survivors of the mutineers of H.M.S. "Bounty," who, after capturing the ship, visited Tahiti and, taking native wives, finally settled on Pitcairn and destroyed the "Bounty." Here they remained undiscovered for twenty years, until a passing ship, noticing signs of inhabitants, lowered a boat and found them with their descendants. Since that time Pitcairn has been inhabited almost solely by the descendants of the mutineers, and at the time of our visit there were about one hundred and ninety persons living there.

As we drew close we could see that it was of small size, and rose precipitously from the sea.

Banana trees, cocoanut palms, and bushes were growing in great profusion, and gave a green, fertile appearance. Here and there, where the land had been tilled, the red-coloured earth made a vivid contrast with the green foliage, while the deep blue of the sea and sky put the finishing touch to a charming picture.

Immediately the anchor was dropped in "Bounty Bay" two boats came off to the ship, and as they drew alongside their occupants scrambled on deck. Nearly all of the men were well-built, several of them being six feet in height. They were bare-footed, and clothed in blue cotton coats and trousers. Their boats were laden with fruit—bananas, limes, and water-melons—which was soon offered for barter or sale. Their first request was one for cartridges in order to shoot their fowls which ran wild over the island. Later on, while pushing our way through the thick bushes on Pitcairn, we frequently disturbed parties of these fowls, birds of all colours, which took to flight and sailed away at a great rate. Some were purchased by the steward for our consumption, but, as might have been expected, they were exceedingly tough and leathery.

As soon as possible we went ashore in one of the boats. The surf is always breaking, even on the best landing place, and these islanders gave us a fine exhibition of boat management. We rowed straight at the breaking surf until within a few

PITCAIRN ISLAND, SOUTH PACIFIC.

feet of it, when suddenly our boatmen swung the boat sharply and, almost touching a huge rock, passed in safety into a small sheltered bay, where we landed on a sloping sandy shore.

High up on the shore, under the shade of banana trees, was a boathouse containing several large boats, one of which was pointed out to us as "the boat Queen Victoria gave us." It was presented to the Pitcairn Islanders several years ago by the late Queen, who always took a deep interest in this little British colony.

We ascended a steep winding pathway to the settlement, and as we walked numbers of small blue-tailed lizards* ran across the path in front of us, while many were seen climbing over the rocks and tree-trunks. Amongst the tree-tops small warblers were busily searching for insects, and uttering a loud "chack-chack." This bird, a reed-warbler—*Tatare vaughani*—is the only land-bird to be found on Pitcairn. It has a rare peculiarity of plumage. When young the colour is normally a greenish-brown, but after the first moult many of the feathers in the wings and tail become a creamy white. In no case are these white feathers evenly distributed, but they are scattered indiscriminately amongst the normally coloured quills.† The uneven distribution of the

* *Lygosoma cyanurum.*

† It is possible that very old birds may have entirely white wings and tail. Amongst the specimens we obtained some were whiter than others, though in no case were they evenly marked with white.

white feathers points to a tendency to albinism from some cause, and it may be due to excessive interbreeding. This seems quite likely, as the island is very small, and this one sedentary species is particularly abundant from the shore to the highest peak. For its size it utters an extremely loud note, and I was frequently surprised by a harsh screaming, like that of a jay, which I found to be made by this little reed-warbler.

Flying over the tops of the cocoanut palms were numbers of white terns,* while now and again a red-tailed tropic bird† sailed high overhead.

A short walk brought us to the settlement, and there we were met by the women and children. The arrival of a ship at Pitcairn is a rare event, and everyone seemed very pleased to see us. All the houses originally built by the mutineers of the "Bounty" are still standing, and were inhabited at the time of our visit. They are strongly made of wood, which was probably taken from the "Bounty." Each house has two rooms, both of which are on one floor, raised about 18 inches from the ground by means of stout posts. The roofs are thatched with palm leaves, and the windows are unglazed openings cut in the wooden walls, and fitted with sliding wooden shutters. The newer houses in the settlement are for the most part built after the same pattern. In the centre

* *Gygis alba.* † *Phaethon rubricauda.*

of the village is a large wooden building, which is used both as church and school.

The ruler of the people of Pitcairn is a Mr. McCoy, who is called the chief magistrate. Unfortunately he was away on a visit to Tahiti, and we therefore did not see him. Lord Crawford paid a visit to the two oldest inhabitants, Mr. Thursday October Christian, aged 84, and Mrs. Young, aged 82, both of whom are grandchildren of original mutineers. Both these old people were ill in bed, but appeared to be much delighted to see us. In each home were three pictures, cut out of an illustrated paper, representing Queen Victoria and our present King and Queen.

The older people, as well as the young children of Pitcairn, have fair complexions, but the people of from 30 to 50 years of age are quite as dark as the average Polynesian. It appears from this that the Pitcairners resemble their ancestors, the "Bounty" mutineers, every alternate generation.

Having obtained a guide, Dr. Macdonald and I started on a walk over the island. From the settlement we ascended the highest peak, about 1000 feet above the level of the sea, the way leading through a luxuriant grove of bananas, amongst which the reed-warblers were very abundant. The peak is composed of a mass of bare rock, and from the summit we had a fine view of the settlement and the southern end of the island. Well-made paths

were numerous, and during the day we walked over the whole of the island, the greater part of which is under cultivation. Water-melons, oranges, and bananas are the principal crops; the fruit was ripe and in great abundance. A continual supply of fresh water trickles from near the summit of the peak, and this is conducted to the settlement by means of wooden troughs. The water is collected in paraffin barrels, and in these we found the *larvæ* of a mosquito.* Near the summit we passed through a grove of cocoanut palms, in which several pairs of white terns were nesting, and our guide told me that there are several places in the island where some sea-bird nests in holes in the ground, but that it was not then its breeding season. This bird must be a petrel, but of what species I do not know.

The windward side of the island is precipitous, and in the cliff there is a cave which Major Wilbraham examined. He found little of interest, however, except a rough carving of the rising sun. The only records of inhabitants previous to the mutineers which we could discover were some stone axe-heads, which we brought away. There appear to be no burial-places, such as those found on Easter Island, nor any images or monuments of any kind. Possibly, however, Pitcairn was never previously inhabited, and the axe-heads may have been left by visitors from a neighbouring shore.

* *Stegomyia fasciata.*

WOODEN HOUSE BUILT BY THE MUTINEERS OF THE "BOUNTY," PITCAIRN ISLAND.

It may be that the Easter Island people paid periodical visits, and, although we found no stone axes on that island, it is quite probable that some would be revealed by a careful search.

No mammals are indigenous to Pitcairn, but rats have been imported by ships and their burrows were seen in plenty. A number of goats, of which we saw a large herd, run wild, and provide meat for the inhabitants. Occasionally they are driven in a valley to be counted, as only a certain number may be shot annually.

We saw no butterflies on the island, but there were many small moths, and one species—*Plutella maculipennis*—was most abundant.

At sunset we went on board the yacht, which was anchored off the settlement, but early next morning a heavy squall arose and the anchor was found to be dragging. Fortunately steam was up, and we got away from the rocky shore, towards which the wind had been rapidly carrying us, without mishap. It was found afterwards that the flukes of the anchor had been broken off, probably by striking a rock when "let go" on the previous morning. During the following day, for as long as we remained at Pitcairn, the yacht had to be hove to off the island.

During the morning we landed again and attended in the large building previously mentioned a meeting of the islanders, at the close of which the National Anthem was sung. Each verse,

written on a blackboard, was held up by a stalwart native for everyone to read. The singing was excellent, and in part singing I have rarely heard its equal; every one of the islanders sang heartily in perfect tune and time. At the close of this meeting the Union Jack was hoisted over Mr. McCoy's house, and a salute of twenty-one guns was thereupon fired from "Valhalla." Before we left all the inhabitants visited the yacht, and Lord Crawford was presented with a piece of iron ballast and some copper nails, which had been saved from the "Bounty."

Soon after mid-day we steamed slowly away, and four boats laden with men and women singing a farewell song followed for some distance in our wake.

All the inhabitants of Pitcairn can speak perfect English, but when speaking among themselves they cannot easily be understood by a stranger, as they then clip their words, sounding only the first and last letters. Why they do this it is difficult to say. When questioned, they replied that they were talking their "own language," adding that this language only differed from English in the above mentioned particular.

CHAPTER XXII.

TAHITI—SOCIETY ISLANDS.

SIX DAYS after leaving Pitcairn, Tahiti,* the largest and most important of the Society Islands, was sighted, and at 10 o'clock in the morning we dropped anchor off the town of Papeete. The barrier-reef protecting the harbour is almost a-wash at low water, and we had to lie outside and wait for a pilot.

From this position a splendid view of the island was obtained. A series of jagged peaks extends through its whole length—peaks covered from base to summit with dense forest, and intersected by narrow gorges filled with rushing torrents of clear water. The town of Papeete is built in a clearing in the forest; between it and the shore lies a stretch of grass dotted with trees, many of which grow within a few feet of the sea and overhang the water. The main street runs parallel with the harbour, and a short distance

* Tahiti is often referred to as Otaheite. This name, we were assured by the Tahitians, is incorrect, and originated from a mistake made by Captain Cook.

inland we could see the French flag flying over Government House.

The pilot, after a little delay, made his appearance, and, taking us safely through the opening in the reef into the still water beyond, brought us to an anchorage close up to the town.

It is forbidden to shoot birds both on Tahiti and on the neighbouring island of Eimeo, nor were we able to obtain permission from the Governor to collect for scientific purposes. During the whole of our stay, which lasted for nearly a fortnight, we saw very few birds indeed. A swift of a species of *Collocalia* was most frequently seen; this, with a few small grass-finches and a single thrush-like bird, completed the list of indigenous land-birds met with by us. The Indian mynah was introduced some years ago for the purpose of destroying a large yellow-bodied wasp which is so numerous as to be a pest. The mynah increased enormously, and is now very plentiful, but the number of wasps remains the same. There can be little doubt that it is entirely owing to the presence of this bird that the native species have become so scarce.

Sea-birds were also scarce, the greater frigate birds,* tropic birds, and noddies† were occasionally observed, while white terns‡ were seen in some numbers flying round the palm trees, on the leaves of which they lay their single egg. Both blue

* *Fregata aquila.* † *Anous stolidus.* ‡ *Gygis alba.*

and white forms of a small heron* were seen together on a small islet, and lastly, at the mouth of a river at Tautira, some miles from Papeete, a single sandpiper† was met with.

Tahiti at one time was the home of a handsome sandpiper‡ so aberrant as to be placed in a genus by itself. The bird was discovered by Captain Cook, and the only specimen of it now in existence is in the Leyden Museum. Dr. Bowdler Sharpe has lately described, from an old coloured figure, a second species of the genus from the neighbouring island of Eimeo. There is, of course, a chance that the *Prosobonia* may yet be re-discovered on Tahiti, or on one of the neighbouring islands, for the group has been by no means thoroughly explored.

We paid several visits to the barrier-reef, where the water was so clear that we could see everything as in a glass tank. There were many large holothurians, one of which on being captured ejected an example of the long silvery fish which has been described as living in these "sea-slugs."

The coral was covered in many places with sea-urchins, which were possessed of spines three or four inches in length, so that when walking on the reef great care had to be taken to prevent a nasty wound.

One evening we watched some natives spearing

* *Demiegretta sacra.* † *Totanus incanus.*
‡ *Prosobonia leucoptera.*

fish by torch-light. Two canoes paddled out a few yards apart until they were exactly over the reef. A torch, composed of dead leaves of the cocoanut palm, was then lighted and waved to and fro until the fish, attracted by the glare, rose to the surface of the water and swam near the boats. Then followed a delightful exhibition of skill. A native standing up in the bows of his canoe would hurl his long spear at a fish as it crossed in front of him, and so deadly was the aim that even small fish, several yards distant, were seldom fortunate enough to escape. The spears were made of light wood, with five straightened fish-hooks bound in a cluster at the end.

Afterwards we all waded on the reef attempting, in native fashion, to spear the fish as they darted about in the masses of coral, but we were not very successful, and soon were glad to abandon the sport, since several of us were badly pricked by the sea-urchins, the spines of which broke off short after entering the flesh and produced intense pain.

One day our friends on shore arranged a picnic in our honour at a place called Fautawa, which was reached by about an hour's drive through magnificent scenery. The road for a great part of the way led along the edge of a mountain stream, winding through a deep valley in which Fautawa is situated. At the top of the valley there towered above us a tall peak the summit of which was composed of a series of jagged points clustered

together in the shape of a crown. Having arrived at our destination we were in time to see the last of the festal preparations made by the natives for our entertainment—the removal of the sucking-pig from the oven. The oven was a hole dug in the ground and lined with large stones which had been previously heated in a fire. Banana leaves had been placed over the hot stones, then the pig had been laid in whole and completely buried, first with the banana leaves, and finally with a layer of earth. Here it had remained for an hour or more, and certainly when it was exhumed it was perfectly cooked, and served up with plantains it made a most palatable dish. We were given several other native dishes, of which the most choice perhaps was the famous "cocoanut salad." This salad is made of the heart of the green top of a cocoanut tree, and as each salad involves the destruction of a tree, it is only prepared on a special occasion.

After a few days' stay at Papeete we were invited to pay a visit to the village of Tautira, which is reputed to be the most picturesque spot in Tahiti. We gladly accepted the invitation, and got under weigh early one morning. Steaming close to the land we had a fine view of the wild rugged coast, and of the high jagged peaks with their cloud-covered summits. Many waterfalls, looking in the distance like threads of silver, were falling sheer down the precipitous wall of

rock which forms the coast in this part of Tahiti. Now and again valleys would open into view, and down them sparkling rivers rushed into the sea.

It was late in the afternoon when we reached Tautira, and a boat at once put off from the shore. In it came the chief of the village, who piloted us safely through the passage in the reef. We anchored off the mouth of the small river, near the banks of which the village of Tautira is built.

The barrier-reef in this part of the island is almost a-wash at high tide; it is nearly semi-circular in shape, and so perfectly flat on the top that, as we entered the passage, we seemed to be steaming through a gateway in a low wall.

The shore is a strip of red-coloured sand, with a narrow belt of cocoanut palms. Behind the palm trees lies the village, and beyond rises a magnificent range of hills clothed to the summit with almost impenetrable forests. The houses are well built, of native pattern; the walls are made of upright bamboos, with a half-inch space between each to allow a free passage of air into the house. Rows of mats are so arranged that they can be let down to cover the walls in case of rain, while at other times they are rolled up under the eaves. All the houses are thatched with leaves of either the cocoanut palm or *pandanus*.

The surroundings of Tautira are very beautiful.

TAUTIRA, TAHITI.

The ground is covered with a thick growth of green grass, studded with *hibiscus* and other flowering plants, while orange trees grow in great profusion.

In Tahiti, as well as in most of the South Sea Islands, great numbers of cocoanuts are grown, and after being dried for copra are shipped in large quantities to Europe. We were much interested in the different methods of gathering the nuts in various islands. In Tahiti the natives climb the trees with the help of a strip of green fibrous bark torn off the stem of a *hibiscus* tree. After knotting the two ends together, the climber slips his feet half through the circle, and, standing with his legs apart, so as to stretch the thong tight, ascends the tree in a series of leaps, with a foot on each side of the trunk. A practised climber will thus mount trees of a very considerable height with a celerity and ease which do not suggest the long practice actually required. On making a trial myself, I found it difficult to climb even so much as a foot from the ground.

In its fresh green state the cocoanut provides a most refreshing drink, but as it grows older the "milk" hardens and forms the white kernel with which we are all familiar. This kernel is the celebrated copra, and is commercially put to many different uses. In Tahiti it is used for sauces and for cocoanut oil. One sauce, which was served with fish at the above-mentioned picnic, although

compounded of scraped nut and sea-water, was really quite palatable.

At Tautira one of the sailors brought me the dried shell of a cocoanut which he told me was full of lizards. I at once plugged the "eye-holes" and took the nutshell on board, where a careful examination showed that it contained 136 lizard eggs, 294 empty egg-shells, and 13 newly-hatched lizards. It would seem, therefore, that many females of this species* repair to the same place to deposit their eggs. The eggs themselves were found to be in all stages of incubation, from "newly-laid" to shells containing perfect lizards. I afterwards found several hundreds of eggs of this species in a hole in the ground, close to the sea, at Papeete. Butterflies were very scarce on Tahiti; at Papeete we met with only one species;† and on a small coral island some miles from Tautira, with but one more.‡ A large hawk-moth, much resembling the well-known convolvulus hawk-moth, was caught on board while we were at anchor. Five species of *Micro-lepidoptera* were also caught at the poop light. These have been determined by Lord Wasingham, who has described one as a new species under the name of *Pyroderces crawfordi*.

Mosquitoes§ were extremely troublesome on shore, but very few appeared on the ship until

* *Lygosoma cyanurum.* † *Nipara eleutha* var. *walkeri.*
‡ *Hypolimnas bolina* var. *thomsoni.* § *Stegomyia fasciata.*

after we left the island, when we discovered that they had been breeding freely in a can of water containing a growing ti plant.

Everywhere along the sea-shore and about the villages the ground was honeycombed with the burrows of land-crabs, and in some places the whole surface appeared to be moving with these creatures. At the least alarm they popped into their holes, from which they never strayed far during the day. When chased, a crab would often hurry into the wrong burrow, and be ejected immediately by the rightful owner, but the inhospitality did not help one to catch them, owing to the speed with which they vanished ultimately underground. If one stood quite still they would reappear at the mouth of the burrow, waving their stalk-eyes in all directions on the look-out for danger. I caught one by cutting it off from its burrow and driving it against a fallen tree, where it turned at bay, rolling its eyes and waving its claws in a formidable manner.

Some of the smaller species of land-crabs on these islands have yellow, others bright blue, claws, and one gains a striking impression of colour when some hundreds of these crabs wave their bright claws as they run over the dried mud close to the sea.

During our stay at Tautira our friends arranged a native concert. This consisted of the singing of "himinees." About one hundred natives sat in

a semi-circle cross-legged on the grass, facing a conductor who gave out the words of the song in a loud voice. The subject of the song, usually chosen on the spur of the moment, refers to some topic of local interest; on this occasion the arrival of the "Valhalla" was the chosen theme. The singing was somewhat weird, but by no means displeasing, and the entertainment would be varied frequently by the conductor, who would leave his seat and run a few paces towards us, shouting and stamping, before he turned again to the performers to urge them to greater efforts.

The day before we left Tautira the ship was visited by a continual stream of canoes, which came from far and near, bringing gifts of fruit, etc., to Lord Crawford. By nightfall the "Valhalla" had the appearance of a huge vegetable and fruit market; there must have been at least a ton of bananas, oranges, plantain, cocoanuts and other fruit on board, as well as several Muscovy ducks and a little piebald pig. When all was aboard the chief of Tautira, one of the finest looking men I have ever seen, made a speech, and then formally presented the gifts.

At ten o'clock the next morning we left Tautira for Papeete again, to complete our coaling, which took a long time owing to the scarcity of lighters.

During our last day at Tahiti we were confined to the ship by one of the heaviest storms I have ever witnessed, the rain falling in such torrents

that in a few minutes the streets were literally full of water.

Early on the morning of 17th April, 1903, we left Tahiti, and in a few minutes the island was completely hidden in rain clouds. During our visit we were treated with the greatest kindness by the inhabitants, who, with the characteristic hospitality of the Tahitian, gave up the whole of their time in order that we might see the many beauties of their island home; and our stay, which had been all too short, will ever be recollected as one of the most delightful experiences enjoyed during the voyages of "Valhalla."

Shortly after leaving Tahiti on the morning of 17th April we passed close to Eimeo, or Morea, as it is now called. We had made arrangements to visit this island, but our plans were upset by unavoidable circumstances, and only a distant view of its beauties was obtained. It rises almost perpendicularly from the sea; the summit is composed of a series of peaks so sharp and even that they somewhat resemble the teeth of a gigantic comb. Through one of these peaks there is a large boring known as the Giant's Spear Hole, which is discernible from Papeete Harbour, some twenty miles distant.

CHAPTER XXIII.

TUTUILA ISLAND, SAMOA.

AFTER leaving Tahiti our course was laid for Tutuila Island, one of the Samoan group, and six days later we arrived off the mouth of the harbour of Pago-Pago.* After waiting in vain for a pilot we entered the harbour without one, and steamed through the narrow intricate passage which extends for some distance towards the centre of the island where the town is situated.

Tutuila belongs to the United States of America, and is used principally as a coaling station for their ships, and the harbour of Pago-Pago is undoubtedly one of the best anchorages in the South Pacific Islands, owing to its sheltered position.

Our visit was made solely for the purpose of obtaining coal, but, being unable to get a supply there, we were forced to leave almost immediately for Apia. Thus only one day was spent ashore, and it was impossible in the short time to do much in the way of collecting.

* Pronounced "Pango-Pango."

Tutuila is apparently of volcanic origin, and the harbour is the centre of an ancient crater. From information given to us I imagine that the highest point in the island, the whole of which is covered with dense forest, is about 2500 feet above sea-level. The climate is very hot and damp, and the annual rainfall is considerable. During our stay rain fell heavily and without intermission, so that collecting under these conditions was by no means easy or pleasant. A butterfly net was soaked through in a very few minutes, and cartridges swelled to such an extent that shooting was almost out of the question. I managed to keep a few dry by carrying them in a sponge-bag —a most useful plan in a damp climate.

Butterflies and moths were extremely numerous, and a considerable number was obtained in spite of the wet weather. A large sphinx moth was hovering round the flowering bushes, apparently undisturbed by the rain, and several smaller kinds of moths were continually beaten out of the soaking wet grass. Birds were fairly abundant; the most numerous being a small greenish-coloured species, with a moderately long curved bill, the gape of which was adorned with two orange-coloured wattles which extended over the cheeks. This bird—*Ptilotis carunculata*—is peculiar to the Samoan Islands, though other species, more or less closely allied, are found on the Fijis and in Australia and New Guinea.

A fine kingfisher,* apparently restricted to the wooded hillsides but common there, was feeding entirely upon insects, especially the *larvæ* of some species of moth. In the cocoanut palms a small paroquet was seen, but not obtained, and a little sunbird,† of a vivid scarlet and black, was feeding among the blossoms of the trees.

The most striking mammal was the fruit bat,‡ numbers of which were seen flying about over the trees even in broad daylight, while at dusk so many of these huge bats came down from the high forests, that we judged there must be a large colony of them at no great distance from Pago-Pago.

Dr. Macdonald and I climbed a pass between two high peaks. For some distance the path led through a plantation of cocoanut trees, where one of the natives engaged in gathering the fruit offered to climb a tree and procure nuts for us. Armed with a huge knife he approached a cocoanut tree, and with a sudden downward and sideward stroke cut a small notch in the bark, into which he put the toe of one foot while he cut another notch with great rapidity a little above the first, then cutting notch after notch with marvellous rapidity he ascended the tree.

While drinking the juice or "milk" of the cocoanuts, we entered into conversation with this

* *Halcyon pealii.* † *Myzomela nigriventris.*
‡ *Pteropus ruficollis.*

man. He was a finely built fellow; except for a waist-cloth of tappa* he wore no clothing, but nearly the whole of his body was covered with tatooing. On one arm we noticed a number of tatooed stripes, and on asking the reason for these bands we were informed that they signified the number of wives he possessed. He had, as far as I can remember, seven such stripes.

After leaving the cocoanut grove we entered the forest, and a short time afterwards gained the crest of the island. Here a fine view was obtained. On one side Pago-Pago harbour, looking like a small pond below us, on the other, the far side of the island sloping gradually downward, towards a large village situated on the sea-shore.

At the top of this pass we saw numbers of noddy terns,† also a few bosun or tropic birds, but no specimens were obtained. Fruit bats were very numerous, and were continually sailing high over our heads, evidently disturbed by the sounds of the shots we had fired.

Throughout the day we were unable to get within shot of the fruit bats, and as I much wished to obtain a specimen, I landed again late in the evening, but, although they were then flying lower, I did not secure one. I afterwards shot one example on Upolu Island, and have no doubt that it is the same species as that inhabiting

* A strong, stiff cloth made from the bark of the bread-fruit tree.

† *Anous stolidus.*

Tutuila, as these two islands are in sight of one another, and fruit-bats can fly great distances. The damage these creatures cause to the cocoanut and banana trees must be very great.

A number of natives gathered together on the shore to watch our departure. The rain was falling in torrents, and removing their scanty clothing they carried it under their arms rolled up in banana leaves. Nevertheless, most of them had umbrellas to protect their heads from the rain—a ridiculous sight but a very necessary precaution, for it is the fashion in the Samoan Islands to dress the hair with lime, which, when exposed to the rain, runs down into the eyes and often causes blindness. Most of the natives are blind in one eye from this cause, and consequently considerable care has to be taken to keep the head dry during wet weather. The men without umbrellas kept their hair tightly bound up and well covered with banana leaves.

In Tutuila we first saw that dread disease "Elephantiasis," which is said to arise from the bites of mosquitoes. In these islands nearly 25 per cent. of the inhabitants were suffering from this disease, some having enlarged arms, others legs swollen to the size of a bolster, while others again were afflicted in various parts of the body. A man, apparently strong and well, but with one arm twice the thickness of the other, was no uncommon sight.

CHAPTER XXIV.

UPOLU ISLAND, SAMOA.

About twelve hours after leaving Tutuila we entered the harbour of Apia, the capital of Upolu, and the principal town of the Samoan group. Rain was falling heavily and the island and harbour had a dismal appearance. Much wreckage was lying about on the shore, a forcible reminder of the fearful hurricane when H.M.S. "Calliope" was the only vessel to escape out of the many anchored in the harbour at the time.

The anchorage is by no means good. Reefs are plentiful, and some of them are just a-wash at low water, and there are no islets or promontories sufficient to shelter ships at anchor, should there be an on-shore wind.

On some of the reefs we saw some natives fly-fishing. Standing up to the waist in water, they were flogging away with what seemed to be indifferent success. We afterwards had an opportunity of examining the tackle used by the Samoans. It proved to consist of a stout bamboo rod, to the point of which a strong line was attached; at

the end of the line a piece of wood about six inches long was tied crossways; and to each end of this a black feather-fly of large proportions was tied. These two flies, not to mention the piece of wood to which they were attached, seemed quite enough to scare away any fish, but for all that we saw many small fish of about half-a-pound weight taken by these means.

Wishing to know the regulations with regard to shooting on the island, Dr. Macdonald and I visited the vice-consul. During our conversation with him we learnt that he had been many years in the Samoan Islands, and as I was most anxious to see a living example of the tooth-billed pigeon,* or "manu mea," as it is called by the natives, I closely questioned the consul about it. He told us that it was not uncommon in some parts of the interior of the island where it appears to live in colonies. The nearest place where he knew it could be found was, however, a two days' journey from Apia, and as we were only to stay at the island for three days an expedition thither was out of the question. I asked him if he could at once send a native to get a living example; he promised to do so, but the man did not return before our departure.

The following morning I went for a long walk on the sea-shore, returning by a path through the cultivated land. The sandy beach swarmed

* *Didunculus strigirostris.*

with shore-birds, sandpipers* and a small species of golden plover†—the latter to be seen in vast numbers—were the most conspicuous. At the mouth of a small river I saw some rails, and amongst the birds I shot was a brilliant scarlet and black sunbird.‡ The small parrot seen on Tutuila was also observed here in the cocoanut trees, but owing to its extreme shyness no specimens were obtained.

During this walk, which led me some distance from the town, I was able to get an idea of the hospitable nature of the unspoilt Samoan native. Happening to enter a village on the banks of a small river, I was at once accosted by the headman, who, by signs, invited me into his house for refreshment. The house, like all those in Samoa, was little more than a roof supported on long beams of wood, the walls being merely mats, which could be let down in bad weather. The floor was covered with large mats which, like those of the walls, were made of the leaves of the *pandanus*, or screw-pine, most neatly and strongly woven together. The people sleep on the floor, their heads, or rather necks, resting on a thick bamboo pillar, raised about an inch from the floor by means of long crossed pieces of wood, shaped like the letter X, and fastened one at each end of the bamboo.

* *Totanus incanus.* † *Charadrius fulvus.*
‡ *Myzomela nigriventris.*

The kindly chief gave me oranges, bananas, and cocoanuts, and after the repast, clapped his hands for "kava" to be brought in. I was then enabled to have my first taste of the national drink of the Samoan and Fiji Islanders, and as I have never seen a full description of the manner in which kava is prepared, or the ceremony of its drinking, I will describe here what I saw.

A large wooden bowl, its surface highly polished by constant use, supported on four short wooden legs, was first placed in position; then facing it we all sat cross-legged on the ground in a semi-circle, and when all were seated the "taupau" or chief dancing girl of the village, to whom only the preparation of the kava is entrusted, entered, and took her seat facing us behind the bowl. A lump of kava* was next produced and cut up into pieces of about the size of a walnut; these were beaten into shreds between two stones,† and then, being placed in the bowl, were covered with water brought in cocoanut shells from the nearest spring. When the bowl was nearly three parts full of water, a bunch of fibres, made from the inner bark of the *hibiscus*, was handed to the girl, who after vigorously stirring the liquid, scooped

* The dried root of a pepper tree.

† Formerly the shredding of the kava root was done by the "taupaus" chewing the root, but this custom is now prohibited by law. In one village, situated some distance from the capital, I saw kava prepared in the original way; but so cleverly and quickly was it done that, had I not been especially looking out for it, I should not have noticed anything unusual

out a mass of sodden kava root and handed the fibres to an attendant, who carried them outside. This proceeding having been repeated several times, the kava was declared, amidst a clapping of hands, to be ready. The taupau thereupon dipped a large cocoanut shell, holding about a pint, into the bowl and carried it first to the most important guest, and then to all the others in turn. The cup is delivered with a most graceful downward and then upward swing of the arm, and the guest, still sitting cross-legged, takes the cup and calling loudly "Manuia," drains it at a draught. No sipping is allowed, and to anyone not accustomed to kava the experience is by no means pleasant. Kava looks like soapy water, and the taste of it—well, anyone desirous of ascertaining what it tastes like can make a very good imitation by mixing a dessert-spoonful of "Gregory" powder in a tumbler of water. Having drained the contents, one passes the cocoanut shell back to the donor. This may be done in two ways. An experienced drinker throws the shell in such a manner that it spins round in the air and falls "dead" at the foot of the bowl. A less experienced guest had better hand it back with a bow as the easiest way out of a difficulty, for it is considered the height of bad manners if the cup is thrown so as to roll even a short way past the kava bowl.

Europeans who have lived for several years in

these islands assured us that they became so accustomed to drinking kava that they acquired a taste for it, but we never took it without an inward shiver.

A too liberal indulgence of this drink causes temporary paralysis of the legs from the knees downwards, as well as a numbing sensation of the tongue, though we were told that even at this stage the brain remains perfectly clear.

The vice-consul had very kindly invited me to visit his farm, about three miles from Apia, and there I spent the second day of our stay. It was very warm work walking thither, as the whole way was uphill under a blazing sun. Arriving at the farm, I struck off into the forest with a guide in search of birds. The most numerous and probably the most beautifully coloured of all the birds in Samoa is a small dove,* of about the size of a turtle-dove, with an emerald green back, a ruby red crown, and a brilliantly-coloured breast of several shades of red and yellow.

We climbed up the hillside for a considerable distance, and from the highest point we had a distant view of the grave of Robert Louis Stevenson, who was buried on the top of the hill overlooking Apia Harbour. I was most anxious to visit this spot, but we were forced to abandon the idea as the day was drawing to a close.

The day before our departure from Apia the

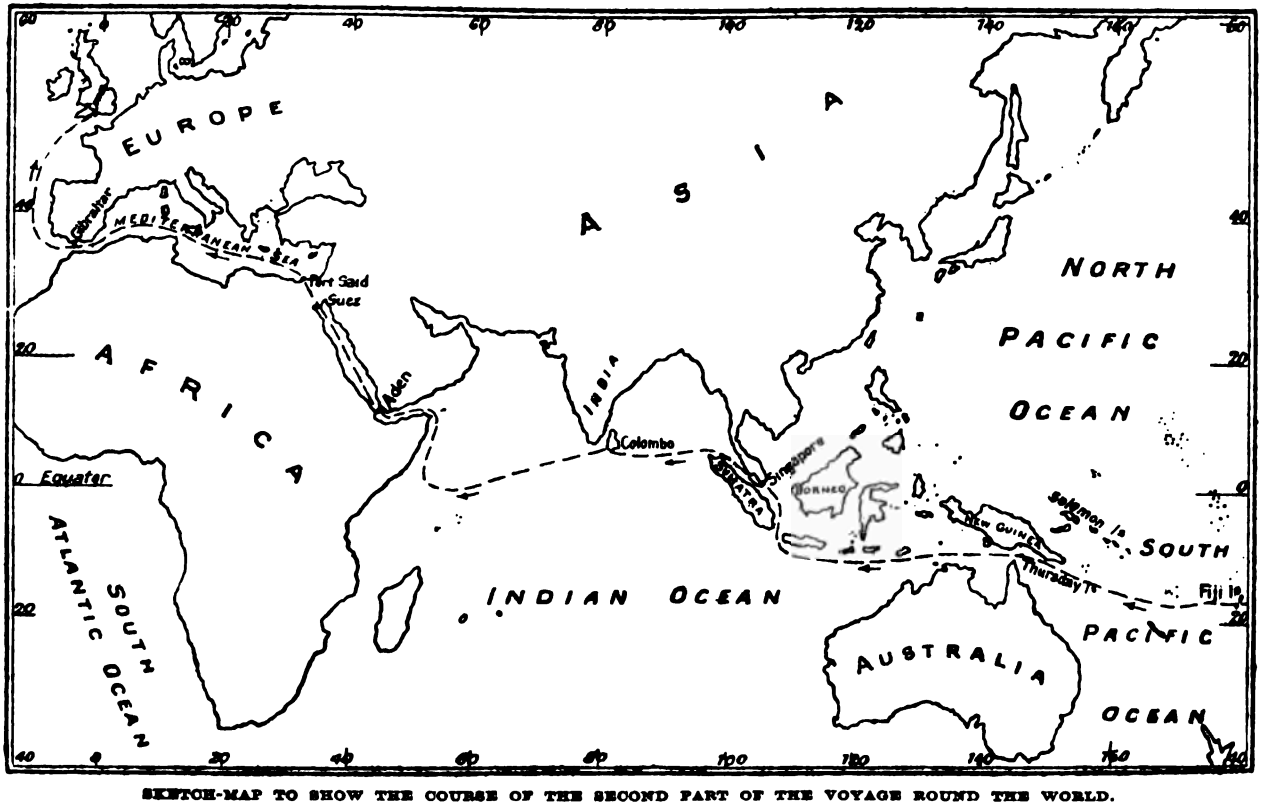
* *Ptilopus fasciatus.*

King of Samoa, Mataafa, paid a visit to Lord Crawford on board the yacht. He was quite unexpected, and at the time we were entertaining a large party of native chiefs and their families, about thirty of whom were sitting in the saloon. Suddenly the king was announced, and we were somewhat astonished to see all our guests vacate their chairs and sit on the floor. This, however, so they told us afterwards, is the correct thing to do when in the presence of their king. He was a very striking looking old man, dressed in a plain white coat and kilt, his only ornament being a thick gold chain, which he wore round his neck.

The Samoan Islands, with the exception of Tutuila, belong to Germany, and are ruled by a Governor. So Mataafa is now a king in name only. Nevertheless he appears to be an important personage amongst his subjects, all of whom treat him with the greatest respect.

Our last evening in Apia was spent at a native dance, which provided one of the most picturesque scenes we witnessed during this voyage. We sat in a semi-circle round a large covered enclosure, and faced the dancers, of whom there were about forty, all in native dress.

The Samoan "dance," or "Siva," as it is called, consists chiefly of a series of arm exercises accompanied by a weird chanting and clapping of hands. The proceedings were brought to a close by a kava drink, for which the most remark-



SKETCH-MAP TO SHOW THE COURSE OF THE SECOND PART OF THE VOYAGE ROUND THE WORLD.

ably beautiful cups were used. They were made from shells of cocoanuts polished and re-polished to such an extent that they had become scarcely thicker than eggshells, and had darkened to a deep black colour. We were informed that these cups were very valuable owing to the great amount of labour required for their manufacture; they were only used on very special occasions.

On 3rd May, four days after leaving the Samoan Islands, the "Valhalla" came to anchor off the town of Suva, the capital of the Fiji Islands. A very short time was spent here, and we consequently saw very little of interest. The town of Suva is as unlike a South Sea Island town as can possibly be imagined. Shops of all kinds are scattered along the whole length of the sea-front, and it is almost impossible to realize that cannibalism was once rampant in this island.

Sailing from Suva on 6th May, 1903, we bade adieu to the South Sea Islands, amongst which so many delightful and never-to-be-forgotten days had been spent. Every year these islands are more and more visited by ships from all parts of the world, and each year brings to their inhabitants the very doubtful blessings of civilization. The people living in the less accessible parts, although quickly becoming spoiled by European influence, are quite superior, not only in appearance, but in manners and physique, to those of the larger towns.

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